WIMP and Dark Matter Searches

NODE=S030
NODE=S030

We omit papers on CHAMP's, millicharged particles, and other exotic particles.

GALACTIC WIMP SEARCHES

NODE=S030410
NODE=S030410

These limits are for weakly-interacting stable particles that may constitute the invisible mass in the galaxy. Unless otherwise noted, a local mass density of 0.3 GeV/cm^3 is assumed; see each paper for velocity distribution assumptions. In the papers the limit is given as a function of the X^0 mass. Here we list limits only for typical mass values of sub-GeV, GeV, 20 GeV, 100 GeV, and 1 TeV. Specific limits on supersymmetric dark matter particles may be found in the Supersymmetry section.

Spin-Independent Cross Section Limits for Dark Matter Particle (X^0) on Nucleon

NODE=S030DIX

For m_{X^0} in GeV range

NODE=S030DI5

We provide here limits fo m_{X^0} < 5 GeV

NODE=S030DI5
NODE=S030DI5

VALUE (pb)	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$< 3 \times 10^{3}$	90	[1] ANGLOHER	24	CRES	light WIMP via diamond
$< 1 \times 10^{4}$	90	[2] ANGLOHER	24B	CRES	low mass DM search
$< 3 \times 10^{-3}$	90	[3] AALBERS	23A	LZ	SI scatter on Xe
$< 4 \times 10^{-7}$	90	[4] AGNES	23	DS50	LDM search via Migdal
$< 6 \times 10^{-7}$	90	[5] AGNES	23B	DS50	LDM scatter on nucleons
< 0.5	90	[6] ALBAKRY	23	SCDM	LDM via Migdal
< 1	95	[7] AMBROSONE	23		DM distortion of CR spectra
<70	90	[8] ANGLOHER	23	CRES	LDM search
$< 8 \times 10^{-8}$	90	[9] LI	23F	PNDX	SI light DM limits
$< 5 \times 10^{-10}$	90	[10] MA	23A	PNDX	LDM search
<10	90	[11] ADHIKARI	22B	C100	sub-GeV WIMP via SI coupling/Migdal effect
$< 1.4 \times 10^{4}$	90	[12] ARMENGAUD	22	EDEL	GeV-scale DM on Ge via Migdal effect
$< 5 \times 10^{5}$	90	[13] CUI	22	PNDX	sub-GeV boosted DM
$< 6.5 \times 10^{6}$	90	[14] XU	22	CDEX	sub-GeV DM
$< 2 \times 10^{-7}$	95	[15] AKERIB	21A	LUX	low mass WIMPs
$< 5 \times 10^{6}$	90	[16] ALKHATIB	21	SCDM	light DM
$< 1 \times 10^{8}$	95	[17] ANDRIAMIR...	21A		sub-GeV DM on nucleon
$< 1 \times 10^{-8}$	90	[18] APRILE	21	XE1T	GeV scale DM
$< 8 \times 10^{-4}$	90	[19] AGUILAR-AR...	20C	DMIC	WIMP SI scatter on Si
$< 8 \times 10^{-4}$	90	[20] AKERIB	20A	LUX	GeV-scale WIMP search
$< 1 \times 10^{-2}$	90	[21] ABDELHAME...	19A	CRES	$CaWO_4$
$< 5.4 \times 10^{-6}$	90	[22] AGNESE	19A	SCDM	GeV-scale WIMPs on Ge
< 1	90	[23] AKERIB	19	LUX	light DM on Xe via Migdal/brem effect
$< 1 \times 10^{-6}$	90	[24] AMOLE	19	PICO	C_3F_8
$< 1.6 \times 10^{-3}$	90	[25] APRILE	19C	XE1T	DM on Xe
$< 1 \times 10^{-7}$	90	[26] APRILE	19D	XE1T	DM on Xe
< 0.1	90	[27] ARMENGAUD	19	EDEL	GeV-scale WIMPs on Ge
$< 1.6 \times 10^{3}$	90	[28] KOBAYASHI	19	XMAS	annual modulation Xe
$< 7 \times 10^{2}$	90	[29] LIU	19B	CDEX	Ge; sub-GeV DM via Migdal
$< 7 \times 10^{-7}$	90	[30] AGNES	18	DS50	GeV-scale WIMPs on Ar
$< 1.5 \times 10^{-5}$	95	[31] AGNESE	18	SCDM	GeV-scale WIMPs on Ge
$< 2 \times 10^{-8}$	90	[32] APRILE	18	XE1T	Xe, SI
$< 4.5 \times 10^{-3}$	90	[33] ARNAUD	18	NEWS	low mass WIMP, Ne
$< 8 \times 10^{-6}$	90	[34] JIANG	18	CDEX	GeV-scale WIMPs on Ge
$< 3 \times 10^{-5}$	90	[35] YANG	18	CDEX	WIMPs on Ge
$< 1 \times 10^{-6}$	90	[36] AKERIB	17	LUX	Xe
$< 1 \times 10^{2}$	90	[37] ANGLOHER	17A	CRES	GeV-scale WIMPs
$< 7 \times 10^{-5}$	90	[38] ANGLOHER	16	CRES	$CaWO_4$
$< 3 \times 10^{-5}$	90	[39] APRILE	16	X100	Xe
$< 4.3 \times 10^{-4}$	90	[40] ARMENGAUD	16	EDE3	GeV-scale WIMPs on Ge
$< 7 \times 10^{-5}$	90	[41] HEHN	16	EDE3	SI WIMP on Ge

$< 6 \times 10^{-5}$	90	[42] ZHAO	16	CDEX	GeV-scale WIMPs on Ge
$< 1 \times 10^{-4}$	90	[43] AMOLE	15	PICO	C_3F_8
$< 8 \times 10^{-5}$	90	[44] XIAO	15	PNDX	WIMPs on Xe
$< 3 \times 10^{-5}$	90	[45] AGNESE	14	SCDM	GeV-scale WIMPs
$< 1 \times 10^{-3}$	90	[46] AKERIB	14	LUX	WIMP on Xe
$< 9 \times 10^{-4}$	90	[47] LI	13B	TEXO	WIMPs on Ge
$< 3 \times 10^{-4}$	90	[48] ARCHAMBAU...	12	PICA	C_4F_{10}
$< 2 \times 10^{-4}$	90	[49] AALSETH	11	CGNT	GeV WIMPs on Ge
$< 5 \times 10^{-4}$	90	[50] AHMED	11B	CDM2	GeV-scale WIMPs on Ge
$< 8 \times 10^{-5}$	90	[51] ANGLE	11	XE10	Xe
$< 5 \times 10^{-4}$	90	[52] AKERIB	10	CDM2	WIMPs on Ge/Si

[1] ANGLOHER 24 search for spin-independent light WIMP (mass between 0.16 and 6 GeV) scatter on diamond target. No signal observed. Limits placed in σ^{SI} vs mass plane for sub-GeV WIMPs. Quoted limit is for m(WIMP) = 0.2 GeV. NODE=S030DI5;LINKAGE=ZA

[2] ANGLOHER 24B search for low mass m(wimp) $\sim$ 100 MeV. No signal observed. Limits placed in cross section vs. mass plane. Quoted limit for m(wimp) = 100 MeV. NODE=S030DI5;LINKAGE=AB

[3] AALBERS 23A search for *e* recoil events from GeV scale WIMP scatter on Xe. No signal observed. Limits placed on 6 different models including $\sigma^{SI} < 3 \times 10^{-3}$ for m(χ) $\sim$ 1 GeV via Migdal scattering. NODE=S030DI5;LINKAGE=XA

[4] AGNES 23 for for light DM via *e* recoil/Migdal effect. No signal observed. $\sigma^{SI}(\chi\mathrm{N}) < 4 \times 10^{-7}$ pb for m(χ) = 3 GeV. NODE=S030DI5;LINKAGE=RA

[5] AGNES 23B search for GeV-scale DM scatter on nucleons in Ar. No signal observed. Limit $\sigma^{SI}(\chi N) < 6 \times 10^{-7}$ pb for m(χ) = 3 GeV. NODE=S030DI5;LINKAGE=SA

[6] ALBAKRY 23 search for light DM via Migdal effect. No signal observed. Allow $\sigma^{SI} < 0.5$ pb for m(χ)=1 GeV (see e.g. Fig. 7). NODE=S030DI5;LINKAGE=UA

[7] AMBROSONE 23 derive limits on $\sigma(\chi p)$ due to possible DM distortion of cosmic ray spectra in starburst galaxies. Limits placed in σ vs. mass (10^{-3}–10 MeV) plane, the most stringent given above being at 1 keV. NODE=S030DI5;LINKAGE=YA

[8] ANGLOHER 23 search for light DM using Si target. No signal observed. Require $\sigma^{SI} <$ 70 pb for m(χ) = 0.3 GeV (see e.g. Fig. 5). NODE=S030DI5;LINKAGE=VA

[9] LI 23F searches for SI light DM scatter from Xe. No signal observed. The quoted limit for m(χ) = 4 GeV. NODE=S030DI5;LINKAGE=WA

[10] MA 23A search for GeV-scale DM using PandaX-4T. No signal observed. $\sigma(\chi p) < 5 \times 10^{-10}$ pb for m(χ) = 10 GeV. NODE=S030DI5;LINKAGE=TA

[11] ADHIKARI 22B search for sub-GeV WIMPs via SI and SD detection; no signal detected; limits placed in m(χ) vs. σ plane for m(χ): 0.2–3 GeV; quoted limit is for m(χ) = 1 GeV. NODE=S030DI5;LINKAGE=NA

[12] ARMENGAUD 22 search for GeV-scale DM scatter on Ge at EDELWEISS via Migdal effect; no signal observed; limits placed in $\sigma^{SI}(\chi N)$ vs. m(DM) plane; quoted limit is for m(DM) = 100 MeV. NODE=S030DI5;LINKAGE=PA

[13] CUI 22 search for sub-GeV boosted DM at PandaX-II at CJPL; no signal detected; limits set in $\sigma^{SI}(\chi p)$ vs. m(χ) plane; quoted limit for m(χ) = 0.1 GeV. NODE=S030DI5;LINKAGE=OA

[14] XU 22 search for sub-GeV boosted DM in CDEX; no signal observed; limits placed in $\sigma(\chi N)$ vs. m(DM) plane; quoted limit is for m(DM) = 0.1 GeV. NODE=S030DI5;LINKAGE=QA

[15] AKERIB 21A present new technique for low mass WIMP detection. Require $\sigma^{SI}(p\chi) < 2 \times 10^{-7}$ pb for m(WIMP) 10 GeV. NODE=S030DI5;LINKAGE=JA

[16] ALKHATIB 21 search for light DM using SuperCDMS; require $\sigma^{SI}(p\chi) < 5 \times 10^{6}$ for m(DM) = 0.1 GeV. NODE=S030DI5;LINKAGE=KA

[17] ANDRIAMIRADO 21A search for upscattered (boosted) sub-GeV DM interacting with proton in PROSPECT detector. No signal observed. Limits placed in $\sigma(\chi N)$ vs. m(DM) plane for m(DM) $\sim$ 1 keV $-$ 0.5 GeV. The listed limit is for m(DM) = 1 keV. NODE=S030DI5;LINKAGE=LA

[18] APRILE 21 search for low recoil energy GeV-scale DM in XENON1T with 1.6 keV threshold. No signal in 0.6 t y exposure. Limits placed in $\sigma^{SI}(\chi N)$ vs. m(DM) plane for m(DM) between 3–12 GeV. The listed limit is for m(DM) = 5 GeV. NODE=S030DI5;LINKAGE=MA

[19] AGUILAR-AREVALO 20C search for WIMP SI scatter on Si using DAMIC at SNOLab; some excess; limits placed in σ vs m(DM) for m(DM) in 1.2–10 GeV; quoted limit for m(WIMP) = 2 GeV. NODE=S030DI5;LINKAGE=IA

[20] AKERIB 20A search for GeV-scale WIMPs via WIMP-nucleon scatter with single photon emission; no signal; limits placed in m(WIMP) vs σ^{SI} plane: for example $\sigma^{SI}(\chi n) < 8 \times 10^{-4}$ pb for m(WIMP) = 2.5 GeV. NODE=S030DI5;LINKAGE=HA

[21] ABDELHAMEED 19A search for GeV scale dark matter SI scatter on $CaWO_4$; no signal, limits placed in σ vs. mass plane for m(DM) $\sim$ 0.1–10 GeV. The listed limit is for m(DM) = 1 GeV. NODE=S030DI5;LINKAGE=A

[22] AGNESE 19A search for 1.5–10 GeV WIMP scatter on Ge in CDMSlite dataset. Limits set in a likelihood analysis. No signal was observed. Limit reported for m(χ) = 5 GeV. NODE=S030DI5;LINKAGE=I

[23] AKERIB 19 search for 0.4–5 GeV DM using bremsstrahlung photons and "Migdal" electrons; 1.4×10^{4} kg d exposure of liquid Xe; constraint $\sigma^{SI}(\chi N) < 1$ pb for m(χ) = 5 GeV in light scalar mediator model. NODE=S030DI5;LINKAGE=N

[24] AMOLE 19 search for SI WIMP scatter on C_3F_8 in PICO-60 bubble chamber; no signal: set limit for spin independent coupling $\sigma^{SI}(\chi N) < 1 \times 10^{-6}$ pb for m(χ) = 5 GeV. NODE=S030DI5;LINKAGE=P

[25] APRILE 19C search for light DM scatter on Xe via atomic excitation, ionization (Migdal effect) or bremsstrahlung; no signal, limits placed in σ vs. m(DM) plane for m(DM) $\sim$ 0.085–2 GeV. The listed limit is for m(DM) = 1 GeV. NODE=S030DI5;LINKAGE=B

[26] APRILE 19D search for light DM scatter on Xe via ionization to probe SI, SD, and χe cross sections; with 22 t d exposure, limits placed in various σ vs. m(DM) planes. Quoted limit is for m(DM) = 5 GeV. NODE=S030DI5;LINKAGE=C

[27] ARMENGAUD 19search for GeV scale WIMP scatter on Ge; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 0.045–10 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DI5;LINKAGE=U

[28] KOBAYASHI 19 search for sub-GeV WIMP annual modulation in Xe via brems; no signal; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m $\sim$ 0.3–1 GeV; quoted limit is for m(χ) = 0.5 GeV. NODE=S030DI5;LINKAGE=BA

[29] LIU 19B seach for sub-GeV DM using Migdal effect on Ge at CDEX-IB; no signal, require $\sigma^{SI}(\chi N) < 7 \times 10^2$ pb for m(χ) = 0.1 GeV. NODE=S030DI5;LINKAGE=D

[30] AGNES 18 search for 1.8–20 GeV WIMP SI scatter on Ar; quoted limit is for m(χ) = 5 GeV. NODE=S030DI5;LINKAGE=F

[31] AGNESE 18 search for GeV scale WIMPs using CDMSlite; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m $\sim$ 1.5–20 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DI5;LINKAGE=H

[32] APRILE 18 search for WIMP scatter on 1 t yr Xe; no signal, limits set in $\sigma(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 6–1000 GeV; quoted limit is for m = 6 GeV. NODE=S030DI5;LINKAGE=W

[33] ARNAUD 18 search for low mass WIMP scatter on Ne via SPC at NEWS-G; limits set in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m $\sim$ 0.5–20 GeV; quoted limit is for m = 5 GeV. NODE=S030DI5;LINKAGE=Y

[34] JIANG 18 search for GeV scale WIMP scatter on Ge; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 3–10 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DI5;LINKAGE=AA

[35] YANG 18 search for WIMP scatter on Ge; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 2–10 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DI5;LINKAGE=EA

[36] AKERIB 17 search for WIMP scatter on Xe; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 5–1 $\times 10^5$ GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DI5;LINKAGE=M

[37] ANGLOHER 17A search for GeV scale WIMP scatter on Al_2O_3 crystal; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 0.15–10 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DI5;LINKAGE=S

[38] ANGLOHER 16 search for GeV scale WIMP scatter on $CaWO_4$; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 0.5–30 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DI5;LINKAGE=R

[39] APRILE 16 search for low mass WIMPs via ionization at XENON100; limits placed in $\sigma^{SI}(\chi N)$ vs m(χ) plane for m $\sim$ 3.5–20 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DI5;LINKAGE=V

[40] ARMENGAUD 16 search for GeV scale WIMP scatter on Ge; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 4–30 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DI5;LINKAGE=T

[41] HEHN 16 search for low mass WIMPs via SI scatter on Ge target using profile likelihood analysis; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 4–30 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DI5;LINKAGE=Z

[42] ZHAO 16 search for GeV-scale WIMP scatter on Ge; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 4–30 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DI5;LINKAGE=FA

[43] AMOLE 15 search for WIMP scatter on C_3F_8 in PICO-2L; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 4–25 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DI5;LINKAGE=O

[44] XIAO 15 search for WIMP scatter on Xe with PandaX-I; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 5–100 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DI5;LINKAGE=DA

[45] AGNESE 14 search for GeV scale WIMPs SI scatter at SuperCDMS; no signal, limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 3.5–30 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DI5;LINKAGE=G

[46] AKERIB 14 search for WIMP scatter on Xe; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 5–5000 GeV. Limit given for m(χ) = 5 GeV. NODE=S030DI5;LINKAGE=L

[47] LI 13B search for WIMP scatter on Ge; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 4–100 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DI5;LINKAGE=CA

[48] ARCHAMBAULT 12 search for low mass WIMP scatter on C_4F_{10}; limits set in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m $\sim$ 4–12 GeV; quoted limit is for m = 5 GeV. NODE=S030DI5;LINKAGE=X

[49] AALSETH 11 search for GeV-scale SI WIMP scatter on Ge; limits placed on $\sigma^{SI}(\chi N)$ for m(χ) $\sim$ 3.5–100 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DI5;LINKAGE=E

[50] AHMED 11B search for GeV scale WIMP scatter on Ge in CDMS II; limits placed in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m $\sim$ 4–12 GeV. NODE=S030DI5;LINKAGE=GA

[51] ANGLE 11 search for GeV scale WIMPs in Xenon-10; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 4–20 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DI5;LINKAGE=Q

[52] AKERIB 10 search for WIMP scatter on Ge/Si in CDMS II; limits place in $\sigma_{SI}(\chi N)$ vs. m(χ) plane for m $\sim$ 3–100 GeV. Limit given for m(DM) = 5 GeV. NODE=S030DI5;LINKAGE=K

For $m_{X^0} = 20$ GeV

NODE=S030DI1

For limits from X^0 annihilation in the Sun, the assumed annihilation final state is shown in parenthesis in the comment. NODE=S030DI1

VALUE (pb)	*CL%*	*DOCUMENT ID*	*TECN*	*COMMENT*

NODE=S030DI1

• • • We do not use the following data for averages, fits, limits, etc. • • •

$<3 \times 10^{-3}$	90	[1] ANGLOHER	24A	COSN	WIMP search	
$<1 \times 10^{-11}$	90	[2] AALBERS	23	LZ	SI scatter on Xe	
$<2 \times 10^{-7}$	90	[3] ABE	23E	XMAS	WIMP search	
$<4 \times 10^{-11}$	90	[4] APRILE	23A	XENT	Si WIMP search	
$<5 \times 10^{-11}$	90	[5] MENG	21B	PNDX	Xe WIMP search	
$<5 \times 10^{-5}$		[6] FELIZARDO	20	SMPL	C_2ClF_5	
$<2.2 \times 10^{-10}$	90	[7] WANG	20G	PNDX	Xe TPC	
		[8] ANGLOHER	19	CRES	$CaWO_4$	
$<7 \times 10^{-5}$	90	[9] KIM	19A	KIMS	NaI	
$<3 \times 10^{-7}$	90	[10] KOBAYASHI	19	XMAS	SI WIMP on Xe	
		[11] SEONG	19	BELL	$\Upsilon \rightarrow \gamma A$, $A \rightarrow \chi\chi$	
$<3.5 \times 10^{-5}$	90	[12] YANG	19	CDEX	annual modulation Ge	
$<2 \times 10^{-7}$	90	[13] ABE	18C	XMAS	X^0- Xe modulation	
$<1.44 \times 10^{-5}$	90	[14] ADHIKARI	18	C100	NaI	
$<3 \times 10^{-7}$	90	[15] AGNES	18	DS50	X^0-Ar	
$<5 \times 10^{-6}$	95	[16] AGNESE	18	SCDM	Ge	
$<4 \times 10^{-8}$	90	[17] AGNESE	18A	SCDM	Ge	
$<6 \times 10^{-11}$	90	[18] APRILE	18	XE1T	Xe, SI	
$<4.5 \times 10^{-3}$	90	[19] ARNAUD	18	NEWS	GeV WIMPs on Ne	
$<2 \times 10^{-6}$	90	[20] AARTSEN	17	ICCB	ν, earth	OCCUR=2
$<2 \times 10^{-10}$	90	[21] AKERIB	17	LUX	Xe	
$<1 \times 10^{-3}$	90	[22] BARBOSA-D...	17	ICCB	NaI	
$<1.7 \times 10^{-10}$	90	[23] CUI	17A	PNDX	WIMPs on Xe	
$<7.3 \times 10^{-7}$	90	AGNES	16	DS50	Ar	
$<1 \times 10^{-5}$	90	[24] AGNESE	16	CDMS	Ge	
$<2 \times 10^{-4}$	90	[25] AGUILAR-AR...	16	DMIC	Si CCDs	
$<4.5 \times 10^{-5}$	90	[26] ANGLOHER	16	CRES	$CaWO_4$	OCCUR=2
$<2 \times 10^{-6}$	90	[27] APRILE	16	X100	Xe	
$<9.4 \times 10^{-8}$	90	[28] ARMENGAUD	16	EDE3	Ge	
$<1.0 \times 10^{-7}$	90	[29] HEHN	16	EDE3	Ge	
$<5 \times 10^{-6}$	90	[30] ZHAO	16	CDEX	Ge	
$<1 \times 10^{-5}$	90	AGNES	15	DS50	Ar	
$<1.5 \times 10^{-6}$	90	[31] AGNESE	15A	CDM2	Ge	
$<1.5 \times 10^{-7}$	90	[32] AGNESE	15B	CDM2	Ge	
$<2 \times 10^{-6}$	90	[33] AMOLE	15	PICO	C_3F_8	
$<1.2 \times 10^{-5}$	90	CHOI	15	SKAM	H, solar ν ($b\overline{b}$)	
$<1.19 \times 10^{-6}$	90	CHOI	15	SKAM	H, solar ν ($\tau^+\tau^-$)	OCCUR=2
$<2 \times 10^{-8}$	90	[34] XIAO	15	PNDX	Xe	
$<2.0 \times 10^{-7}$	90	[35] AGNESE	14	SCDM	Ge	
$<3.7 \times 10^{-5}$	90	[36] AGNESE	14A	SCDM	Ge	
$<1 \times 10^{-9}$	90	[37] AKERIB	14	LUX	Xe	
$<2 \times 10^{-6}$	90	[38] ANGLOHER	14	CRES	$CaWO_4$	
$<5 \times 10^{-6}$	90	FELIZARDO	14	SMPL	C_2ClF_5	
$<8 \times 10^{-6}$	90	[39] LEE	14A	KIMS	CsI	
$<2 \times 10^{-4}$	90	[40] LIU	14A	CDEX	Ge	
$<1 \times 10^{-5}$	90	[41] YUE	14	CDEX	Ge	
$<1.08 \times 10^{-4}$	90	[42] AARTSEN	13	ICCB	H, solar ν ($\tau^+\tau^-$)	
$<1.5 \times 10^{-5}$	90	[43] ABE	13B	XMAS	Xe	
$<3.1 \times 10^{-6}$	90	[44] AGNESE	13	CDM2	Si	
$<3.4 \times 10^{-6}$	90	[45] AGNESE	13A	CDM2	Si	
$<2.2 \times 10^{-6}$	90	[46] AGNESE	13A	CDM2	Si	OCCUR=2
		[47] BERNABEI	13A	DAMA	NaI modulation	
$<1.2 \times 10^{-4}$	90	[48] LI	13B	TEXO	Ge	
		[49] ZHAO	13	CDEX	Ge	
$<1.2 \times 10^{-7}$	90	AKIMOV	12	ZEP3	Xe	
		[50] ANGLOHER	12	CRES	$CaWO_4$	
$<8 \times 10^{-6}$	90	[51] ANGLOHER	12	CRES	$CaWO_4$	OCCUR=2
$<7 \times 10^{-9}$	90	[52] APRILE	12	X100	Xe	
$<7 \times 10^{-7}$	90	[53] ARMENGAUD	12	EDE2	Ge	
		[54] BARRETO	12	DMIC	CCD	
$<2 \times 10^{-6}$	90	BEHNKE	12	COUP	CF_3I	
$<7 \times 10^{-6}$		[55] FELIZARDO	12	SMPL	C_2ClF_5	
$<1.5 \times 10^{-6}$	90	KIM	12	KIMS	CsI	
$<5 \times 10^{-5}$	90	[56] AALSETH	11	CGNT	Ge	
		[57] AALSETH	11A	CGNT	Ge	
$<5 \times 10^{-7}$	90	[58] AHMED	11	CDM2	Ge, inelastic	
$<2.7 \times 10^{-7}$	90	[59] AHMED	11A	RVUE	Ge	

<3	$\times 10^{-6}$	90	[60] ANGLE	11	XE10	Xe
<7	$\times 10^{-8}$	90	[61] APRILE	11	X100	Xe
			[62] APRILE	11A	X100	Xe, inelastic
<2	$\times 10^{-8}$	90	[52] APRILE	11B	X100	Xe
			[63] HORN	11	ZEP3	Xe
<2	$\times 10^{-7}$	90	AHMED	10	CDM2	Ge
<1	$\times 10^{-5}$	90	[64] AKERIB	10	CDM2	Si, Ge, low threshold
<1	$\times 10^{-7}$	90	APRILE	10	X100	Xe
<2	$\times 10^{-6}$	90	ARMENGAUD	10	EDE2	Ge
<4	$\times 10^{-5}$	90	FELIZARDO	10	SMPL	C_2ClF_3
<1.5	$\times 10^{-7}$	90	[65] AHMED	09	CDM2	Ge
<2	$\times 10^{-4}$	90	[66] LIN	09	TEXO	Ge
			[67] AALSETH	08	CGNT	Ge

[1] ANGLOHER 24A search for WIMP scatter on NaI target. No signal observed. Limits placed in σ^{SI} vs m plane. NODE=S030DI1;LINKAGE=GB

[2] AALBERS 23 present first limits for WIMP scatter on Xe. $\sigma^{SI}(\chi p) < 1 \times 10^{-11}$ pb for m(χ) = 20 GeV. NODE=S030DI1;LINKAGE=DB

[3] ABE 23E search for WIMP scatter on Xe in XMASS. No signal observed. Require $\sigma^{SI} < 2 \times 10^{-7}$ pb for m(χ) = 20 GeV. NODE=S030DI1;LINKAGE=FB

[4] APRILE 23A present first results from Xe-nton SI WIMP search. No signal observed. Quoted limit is for m(χ) = 20 GeV. NODE=S030DI1;LINKAGE=EB

[5] MENG 21B search for SI WIMP interaction with 3.7 t Xe and 0.63 t yr exposure. No signal observed. Limits placed in m(DM) vs. σ^{SI} plane. NODE=S030DI1;LINKAGE=CB

[6] FELIZARDO 20 presents 2014 SIMPLE bounds on WIMP DM using C_2ClF_5 target. NODE=S030DI1;LINKAGE=ZA

[7] WANG 20G search for SI WIMP scatter on Xe with 132 t d exposure of PANDAX-II. NODE=S030DI1;LINKAGE=BB

[8] ANGLOHER 19 search for low mass WIMP scatter on $CaWO_4$; no signal; limits placed on Wilson coefficients for m(χ) = 0.6–60 GeV. NODE=S030DI1;LINKAGE=NA

[9] KIM 19A search for WIMP scatter in NaI KIMS experiment; no signal: require $\sigma^{SI}(\chi n) < 7 \times 10^{-5}$ pb for m(χ) = 20 GeV. NODE=S030DI1;LINKAGE=RA

[10] KOBAYASHI 19 search for WIMP scatter in XMASS single-phase liquid Xe detector; no signal; require $\sigma^{SI}(\chi N) < 3 \times 10^{-7}$ pb for m(χ) = 20 GeV. NODE=S030DI1;LINKAGE=SA

[11] SEONG 19 search for $\Upsilon \to \gamma A$, $A \to \chi\chi$ via CP-odd Higgs; no signal; limits on BF set; model dependent conversion to WIMP-nucleon scattering cross section limits $\sigma^{SI} < 10^{-36}$ cm^2 for m(χ) = 0.01–1 GeV. NODE=S030DI1;LINKAGE=LA

[12] YANG 19 search for low mass wimps via annual modulation in Ge; no signal; require $\sigma^{SI}(\chi N) < 3.5 \times 10^{-5}$ pb for m(χ) = 20 GeV. NODE=S030DI1;LINKAGE=TA

[13] ABE 18C search for WIMP annual modulation signal for m(WIMP): 6–20 GeV; limits set on SI WIMP-nucleon cross section: see Fig. 6. NODE=S030DI1;LINKAGE=JA

[14] ADHIKARI 18 search for WIMP scatter on NaI; no signal; require $\sigma^{SI} < 1.44 \times 10^{-5}$ pb for m(WIMP) = 20 GeV; inconsistent with DAMA/LIBRA result. NODE=S030DI1;LINKAGE=MA

[15] AGNES 18 search low mass m(WIMP): 1.8–20 GeV scatter on Ar; limits on SI WIMP-nucleon cross section set in Fig. 8. NODE=S030DI1;LINKAGE=KA

[16] AGNESE 18 give limits for $\sigma^{SI}(\chi N)$ for m(WIMP) between 1.5 and 20 GeV using CDMSlite mode data. NODE=S030DI1;LINKAGE=IA

[17] AGNESE 18A search for WIMP scatter on Ge at SuperCDMS; 1 event, consistent with expected background; set limit in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m $\sim$ 10–250 GeV. NODE=S030DI1;LINKAGE=UA

[18] APRILE 18 search for WIMP scatter on 1 t yr Xe; no signal, limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 6–1000 GeV. NODE=S030DI1;LINKAGE=WA

[19] ARNAUD 18 search for low mass WIMP scatter on Ne via SPC at NEWS-G; limits set in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m $\sim$ 0.5–20 GeV. NODE=S030DI1;LINKAGE=XA

[20] AARTSEN 17 obtain σ(SI) $< 6 \times 10^{-6}$ pb for m(wimp) = 20 GeV from ν from earth. NODE=S030DI1;LINKAGE=DA

[21] AKERIB 17 search for WIMP scatter on Xe; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 5–1×10^5 GeV. NODE=S030DI1;LINKAGE=VA

[22] BARBOSA-DE-SOUZA 17 search for annual modulation of WIMP scatter on NaI using an exposure of 61 kg yr of DM-Ice17 for recoil energy in the 4–20 keV range (DAMA found modulation for recoil energy $<$ 5 keV). No modulation seen. Sensitivity insufficient to distinguish DAMA signal from null. NODE=S030DI1;LINKAGE=EA

[23] CUI 17A search for SI WIMP scatter; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m $\sim$ 10–1×10^4 GeV using 54 ton-day exposure of Xe. NODE=S030DI1;LINKAGE=YA

[24] AGNESE 16 CDMSlite excludes low mass WIMPs 1.6–5.5 GeV and SI scattering cross section depending on m(WIMP); see Fig. 4. NODE=S030DI1;LINKAGE=S

[25] AGUILAR-AREVALO 16 search low mass 1–10 GeV WIMP scatter on Si CCDs; set limits Fig. 11. NODE=S030DI1;LINKAGE=U

[26] ANGLOHER 16 search for GeV scale WIMP scatter on $CaWO_4$; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 0.5–30 GeV. NODE=S030DI1;LINKAGE=V

[27] APRILE 16 search for low mass WIMPs via ionization at XENON100; limits placed in $\sigma^{SI}(\chi N)$ vs m(χ) plane for m $\sim$ 3.5–20 GeV. NODE=S030DI1;LINKAGE=Y

[28] ARMENGAUD 16 search for GeV scale WIMP scatter on Ge; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 4–30 GeV. NODE=S030DI1;LINKAGE=W

[29] HEHN 16 search for low mass WIMPs via SI scatter on Ge target using profile likelihood analysis; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 4–30 GeV. NODE=S030DI1;LINKAGE=Z

[30] ZHAO 16 search for GeV-scale WIMP scatter on Ge; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 4–30 GeV. NODE=S030DI1;LINKAGE=X

[31] AGNESE 15A reanalyse AHMED 11B low threshold data. See their Fig. 12 (left) for improved limits extending down to 5 GeV. NODE=S030DI1;LINKAGE=O

[32] AGNESE 15B reanalyse AHMED 10 data. NODE=S030DI1;LINKAGE=P

[33] See their Fig. 7 for limits extending down to 4 GeV. NODE=S030DI1;LINKAGE=Q

[34] XIAO 15 search for WIMP scatter on Xe with PandaX-I; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 5–100 GeV. NODE=S030DI1;LINKAGE=R

[35] This limit value is provided by the authors. See their Fig. 4 for limits extending down to m_{χ^0} = 3.5 GeV. NODE=S030DI1;LINKAGE=I

[36] This limit value is provided by the authors. AGNESE 14A result is from CDMSlite mode operation with enhanced sensitivity to low mass m_{χ^0}. See their Fig. 3 for limits extending down to m_{χ^0} = 3.5 GeV (see also Fig. 4 in AGNESE 14). NODE=S030DI1;LINKAGE=J

[37] See their Fig. 5 for limits extending down to m_{χ^0} = 5.5 GeV. NODE=S030DI1;LINKAGE=H

[38] See their Fig. 5 for limits extending down to m_{χ^0} = 1 GeV. NODE=S030DI1;LINKAGE=K

[39] See their Fig. 5 for limits extending down to m_{χ^0} = 5 GeV. NODE=S030DI1;LINKAGE=L

[40] LIU 14A result is based on prototype CDEX-0 detector. See their Fig. 13 for limits extending down to m_{χ^0} = 2 GeV. NODE=S030DI1;LINKAGE=M

[41] See their Fig. 4 for limits extending down to m_{χ^0} = 4.5 GeV. NODE=S030DI1;LINKAGE=N

[42] AARTSEN 13 search for neutrinos from the Sun arising from the pair annihilation of χ^0 trapped by the sun in data taken between June 2010 and May 2011. NODE=S030DI1;LINKAGE=G

[43] See their Fig. 8 for limits extending down to m_{χ^0} = 7 GeV. NODE=S030DI1;LINKAGE=AB

[44] This limit value is provided by the authors. AGNESE 13 use data taken between Oct. 2006 and July 2007. See their Fig. 4 for limits extending down to m_{χ^0} = 7 GeV. NODE=S030DI1;LINKAGE=A

[45] This limit value is provided by the authors. AGNESE 13A use data taken between July 2007 and Sep. 2008. Three candidate events are seen. Assuming these events are real, the best fit parameters are m_{χ^0} = 8.6 GeV and $\sigma = 1.9 \times 10^{-5}$ pb. NODE=S030DI1;LINKAGE=B

[46] This limit value is provided by the authors. Limit from combined data of AGNESE 13 and AGNESE 13A. See their Fig. 4 for limits extending down to m_{χ^0} = 5.5 GeV. NODE=S030DI1;LINKAGE=C

[47] BERNABEI 13A search for annual modulation of counting rate in the 2–6 keV recoil energy interval, in a 14 yr live time exposure of 1.33 t yr. Find a modulation of 0.0112 $\pm$ 0.0012 counts/(day kg keV) with 9.3 sigma C.L. Find period and phase in agreement with expectations from DM particles. NODE=S030DI1;LINKAGE=GA

[48] LI 13B search for WIMP scatter on Ge; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 4–100 GeV. NODE=S030DI1;LINKAGE=E

[49] See their Fig. 5 for limits for m_{χ^0} = 4–12 GeV. NODE=S030DI1;LINKAGE=F

[50] ANGLOHER 12 observe excess events above the expected background which are consistent with χ^0 with mass $\sim$ 25 GeV (or 12 GeV) and spin-independent χ^0-nucleon cross section of 2×10^{-6} pb (or 4×10^{-5} pb). NODE=S030DI1;LINKAGE=AG

[51] Reanalysis of ANGLOHER 09 data with all three nuclides. See also BROWN 12. NODE=S030DI1;LINKAGE=AN

[52] See also APRILE 14A. NODE=S030DI1;LINKAGE=PA

[53] See their Fig. 4 for limits extending down to m_{χ^0} = 7 GeV. NODE=S030DI1;LINKAGE=AM

[54] See their Fig. 13 for cross section limits for m_{χ^0} between 1.2 and 10 GeV. NODE=S030DI1;LINKAGE=BA

[55] See also DAHL 12 for a criticism. NODE=S030DI1;LINKAGE=FE

[56] See their Fig. 4 for limits extending to m_{χ^0} = 3.5 GeV. NODE=S030DI1;LINKAGE=AL

[57] AALSETH 11A find indications of annual modulation of the data, the energy spectrum being compatible with χ^0 mass around 8 GeV. See also AALSETH 13. NODE=S030DI1;LINKAGE=AS

[58] AHMED 11 search for χ^0 inelastic scattering. See their Fig. 8–10 for limits. The inelastic cross section reduces to the elastic cross section at the limit of zero mass splitting (Fig. 8, left). NODE=S030DI1;LINKAGE=AE

[59] AHMED 11A combine CDMS II and EDELWEISS data. NODE=S030DI1;LINKAGE=ED

[60] ANGLE 11 show limits down to m_{χ^0} = 4 GeV on Fig. 3. NODE=S030DI1;LINKAGE=NG

[61] APRILE 11 reanalyze APRILE 10 data. NODE=S030DI1;LINKAGE=AP

[62] APRILE 11A search for χ^0 inelastic scattering. See their Fig. 2 and 3 for limits. See also APRILE 14A. NODE=S030DI1;LINKAGE=PR

[63] HORN 11 perform detector calibration by neutrons. Earlier results are only marginally affected. NODE=S030DI1;LINKAGE=HO

[64] See their Fig. 10 and 12 for limits extending to χ^0 mass of 1 GeV. NODE=S030DI1;LINKAGE=AK

[65] Superseded by AHMED 10. NODE=S030DI1;LINKAGE=AH

[66] See their Fig. 6(a) for cross section limits for m_{χ^0} extending down to 2 GeV. NODE=S030DI1;LINKAGE=LI

[67] See their Fig. 2 for cross section limits for m_{χ^0} between 4 and 10 GeV. NODE=S030DI1;LINKAGE=AA

For $m_{\chi^0} = 100$ GeV

NODE=S030DI2

For limits from X^0 annihilation in the Sun, the assumed annihilation final state is shown in parenthesis in the comment.

NODE=S030DI2

NODE=S030DI2

• • • We do not use the following data for averages, fits, limits, etc. • • •

VALUE (pb)	CL%	DOCUMENT ID		TECN	COMMENT	
$<1 \times 10^{-3}$	90	[1] ANGLOHER	24A	COSN	WIMP search	
$<2.5 \times 10^{-11}$	90	[2] AALBERS	23	LZ	SI scatter on Xe	
$<2 \times 10^{-8}$	90	[3] ABE	23E	XMAS	WIMP search	
$<6 \times 10^{-11}$	90	[4] APRILE	23A	XENT	SI WIMP search	
$<6 \times 10^{-11}$	90	[5] MENG	21B	PNDX	Xe WIMP search	
		[6] ADHIKARI	20	DEAP	Ar	
$<5 \times 10^{-5}$		[7] FELIZARDO	20	SMPL	W	
$<4.2 \times 10^{-10}$	90	[8] WANG	20G	PNDX	Xe TPC	
$<4 \times 10^{-8}$	90	[9] ABE	19	XMAS	Xe	
$<3.9 \times 10^{-9}$	90	[10] AJAJ	19	DEAP	Ar	
$<2.3 \times 10^{-6}$	90	[11] ADHIKARI	18	C100	NaI	
$<1.14 \times 10^{-8}$	90	[12] AGNES	18A	DS50	Ar	
$<2 \times 10^{-8}$	90	[13] AGNESE	18A	CDMS	Ge	
$<1.2 \times 10^{-8}$	90	[14] AMAUDRUZ	18	DEAP	Ar	
$<9.12 \times 10^{-11}$	90	[15] APRILE	18	XE1T	Xe	
		[16] REN	18	PNDX	SIDM at PDX-II	
$<1.7 \times 10^{-10}$	90	[17] AKERIB	17	LUX	Xe	
$<1.2 \times 10^{-10}$	90	[18] APRILE	17G	XE1T	Xe	
$<1.2 \times 10^{-10}$	90	[19] CUI	17A	PNDX	Xe	
$<2.0 \times 10^{-8}$	90	AGNES	16	DS50	Ar	
$<1 \times 10^{-9}$	90	[20] AKERIB	16	LUX	Xe	
$<1 \times 10^{-9}$	90	[21] APRILE	16B	X100	Xe	
$<2 \times 10^{-8}$	90	[22] TAN	16	PNDX	Xe	
$<4 \times 10^{-10}$	90	[23] TAN	16B	PNDX	Xe	
$<6 \times 10^{-8}$	90	AGNES	15	DS50	Ar	
$<4 \times 10^{-8}$	90	[24] AGNESE	15B	CDM2	Ge	
$<7.13 \times 10^{-6}$	90	CHOI	15	SKAM	H, solar ν ($b\bar{b}$)	
$<6.26 \times 10^{-7}$	90	CHOI	15	SKAM	H, solar ν (W^+W^-)	OCCUR=2
$<2.76 \times 10^{-7}$	90	CHOI	15	SKAM	H, solar ν ($\tau^+\tau^-$)	OCCUR=3
$<1.5 \times 10^{-8}$	90	[25] XIAO	15	PNDX	Xe	
$<1 \times 10^{-9}$	90	AKERIB	14	LUX	Xe	
$<4.0 \times 10^{-6}$	90	[26] AVRORIN	14	BAIK	H, solar ν (W^+W^-)	
$<1.0 \times 10^{-4}$	90	[26] AVRORIN	14	BAIK	H, solar ν ($b\bar{b}$)	OCCUR=2
$<1.6 \times 10^{-6}$	90	[26] AVRORIN	14	BAIK	H, solar ν ($\tau^+\tau^-$)	OCCUR=3
$<5 \times 10^{-6}$	90	FELIZARDO	14	SMPL	C_2ClF_5	
$<6.01 \times 10^{-7}$	90	[27] AARTSEN	13	ICCB	H, solar ν (W^+W^-)	
$<3.30 \times 10^{-5}$	90	[27] AARTSEN	13	ICCB	H, solar ν ($b\bar{b}$)	OCCUR=2
$<1.9 \times 10^{-6}$	90	[28] ADRIAN-MAR..	13	ANTR	H, solar ν (W^+W^-)	
$<1.2 \times 10^{-4}$	90	[28] ADRIAN-MAR..	13	ANTR	H, solar ν ($b\bar{b}$)	OCCUR=2
$<7.6 \times 10^{-7}$	90	[28] ADRIAN-MAR..	13	ANTR	H, solar ν ($\tau^+\tau^-$)	OCCUR=3
$<2 \times 10^{-6}$	90	[29] AGNESE	13	CDM2	Si	
$<1.6 \times 10^{-6}$	90	[30] BOLIEV	13	BAKS	H, solar ν (W^+W^-)	
$<1.9 \times 10^{-5}$	90	[30] BOLIEV	13	BAKS	H, solar ν ($b\bar{b}$)	OCCUR=2
$<7.1 \times 10^{-7}$	90	[30] BOLIEV	13	BAKS	H, solar ν ($\tau^+\tau^-$)	OCCUR=3
$<3.2 \times 10^{-4}$	90	[31] LI	13B	TEXO	WIMPs on Ge	
$<1.67 \times 10^{-6}$	90	[32] ABBASI	12	ICCB	H, solar ν (W^+W^-)	
$<1.07 \times 10^{-4}$	90	[32] ABBASI	12	ICCB	H, solar ν ($b\bar{b}$)	OCCUR=2
$<4 \times 10^{-8}$	90	AKIMOV	12	ZEP3	Xe	
$<1.4 \times 10^{-6}$	90	[33] ANGLOHER	12	CRES	$CaWO_4$	
$<3 \times 10^{-9}$	90	[34] APRILE	12	X100	Xe	
$<3 \times 10^{-7}$	90	BEHNKE	12	COUP	CF_3I	
$<7 \times 10^{-6}$		FELIZARDO	12	SMPL	C_2ClF_5	
$<2.5 \times 10^{-7}$	90	[35] KIM	12	KIMS	CsI	
$<2 \times 10^{-4}$	90	AALSETH	11	CGNT	Ge	
		[36] AHMED	11	CDM2	Ge, inelastic	
$<3.3 \times 10^{-8}$	90	[37] AHMED	11A	RVUE	Ge	
		[38] AJELLO	11	FLAT		
$<3 \times 10^{-8}$	90	[39] APRILE	11	X100	Xe	
		[40] APRILE	11A	X100	Xe, inelastic	
$<1 \times 10^{-8}$	90	[34] APRILE	11B	X100	Xe	
$<5 \times 10^{-8}$	90	[41] ARMENGAUD	11	EDE2	Ge	
		[42] HORN	11	ZEP3	Xe	

<4	$\times 10^{-8}$	90	AHMED	10	CDM2	Ge
<9	$\times 10^{-6}$	90	AKERIB	10	CDM2	Si, Ge, low threshold
			[43] AKIMOV	10	ZEP3	Xe, inelastic
<5	$\times 10^{-8}$	90	APRILE	10	X100	Xe
<1	$\times 10^{-7}$	90	ARMENGAUD	10	EDE2	Ge
<3	$\times 10^{-5}$	90	FELIZARDO	10	SMPL	C_2ClF_3
<5	$\times 10^{-8}$	90	[44] AHMED	09	CDM2	Ge
			[45] ANGLE	09	XE10	Xe, inelastic
<3	$\times 10^{-4}$	90	LIN	09	TEXO	Ge
			[46] GIULIANI	05	RVUE	

[1] ANGLOHER 24A search for WIMP scatter on NaI target. No signal observed. Limits placed in σ^{SI} vs m plane. NODE=S030DI2;LINKAGE=IA

[2] AALBERS 23 present first LZ limits on SI WIMP-nucleon scatter from Xe. $\sigma^{SI}(\chi p) < 2.5 \times 10^{-11}$ pb for m(χ) = 100 GeV. NODE=S030DI2;LINKAGE=FA

[3] ABE 23E search for WIMP scatter on Xe in XMASS. No signal observed. Require $\sigma^{SI} < 2 \times 10^{-7}$ pb for m(χ) = 100 GeV. NODE=S030DI2;LINKAGE=HA

[4] APRILE 23A present first results from Xe-nton SI WIMP search. No signal observed. Quoted limit is for m(χ) = 100 GeV. NODE=S030DI2;LINKAGE=GA

[5] MENG 21B search for SI WIMP interaction with 3.7 t Xe and 0.63 t yr exposure. No signal observed. Limits placed in m(DM) vs. σ^{SI} plane. NODE=S030DI2;LINKAGE=EA

[6] ADHIKARI 20 search for SI WIMP scatter from Ar in AJAJ 19 data. No signal observed. Limits placed on σ^{p} vs. m(WIMP) for various assumed operators and models. NODE=S030DI2;LINKAGE=CA

[7] FELIZARDO 20 presents 2014 SIMPLE bounds on WIMP DM using C_2ClF_5 target. NODE=S030DI2;LINKAGE=BA

[8] WANG 20G search for SI WIMP scatter on Xe with 132 t d exposure of PANDAX-II. NODE=S030DI2;LINKAGE=DA

[9] ABE 19 search for SI DD in single phase Xe; no signal; require $\sigma^{SI}(\chi p) < 4 \times 10^{-8}$ pb for m(χ) $\sim$ 100 GeV. NODE=S030DI2;LINKAGE=S

[10] AJAJ 19 search for SI WIMP-nucleon scatter with 758 tonne day exposure of single phase liquid Ar; no signal: require $\sigma^{SI}(\chi N) < 3.9 \times 10^{-9}$ pb for m(χ) = 100 GeV. NODE=S030DI2;LINKAGE=W

[11] ADHIKARI 18 search for WIMP scatter on NaI;limit set $\sigma^{SI}(\chi p) < 2.3 \times 10^{-6}$ pb for m(χ) = 100 GeV. NODE=S030DI2;LINKAGE=T

[12] AGNES 18A search for WIMP scatter on 46.4 kg Ar; no signal; require $\sigma^{SI}(\chi N) < 1.14 \times 10^{-8}$ pb for m(χ) = 100 GeV. NODE=S030DI2;LINKAGE=U

[13] AGNESE 18A set limit $\sigma^{SI}(\chi N) < 2 \times 10^{-8}$ pb for m(WIMP) = 100 GeV. NODE=S030DI2;LINKAGE=N

[14] AMAUDRUZ 18 search for WIMP scatter on Ar with DEAP-3600; limits set: $\sigma^{SI}(\chi p) < 1.2 \times 10^{-8}$ pb for m(WIMP) = 100 GeV. NODE=S030DI2;LINKAGE=Q

[15] APRILE 18 search for WIMP scatter on 1.3 t liquid Xe; no signal; require $\sigma^{SI}(\chi p) < 9.12 \times 10^{-11}$ pb for m(χ) = 100 GeV. NODE=S030DI2;LINKAGE=V

[16] REN 18 search for self-interacting DM at Panda-X-II with a total exposure of 54 ton day; limits set in m(DM) vs. m(mediator) plane. NODE=S030DI2;LINKAGE=R

[17] AKERIB 17 exclude SI cross section > 1.7×10^{-10} pb for m(WIMP) = 100 GeV. Uses complete LUX data set. NODE=S030DI2;LINKAGE=J

[18] APRILE 17G set limit $\sigma^{SI}(\chi p) < 1.2\ 10^{-10}$ pb for m(WIMP) = 100 GeV using 1 ton fiducial mass Xe TPC. Exposure is 34.2 live days. NODE=S030DI2;LINKAGE=O

[19] CUI 17A search for SI WIMP scatter; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m $\sim$ 10–1×10^4 GeV using 54 ton-day exposure of Xe. NODE=S030DI2;LINKAGE=P

[20] AKERIB 16 re-analysis of 2013 data exclude SI cross section > 1×10^{-9} pb for m(WIMP) = 100 GeV on Xe target. NODE=S030DI2;LINKAGE=G

[21] APRILE 16B combined 447 live days using Xe target exclude σ(SI) > 1.1×10^{-9} pb for m(WIMP) = 50 GeV. NODE=S030DI2;LINKAGE=K

[22] TAN 16 search for WIMP scatter off Xe target; see SI exclusion plot Fig. 6. NODE=S030DI2;LINKAGE=H

[23] TAN 16B search for WIMP-p scatter off Xe target; see Fig. 5 for SI exclusion. NODE=S030DI2;LINKAGE=I

[24] AGNESE 15B reanalyse AHMED 10 data. NODE=S030DI2;LINKAGE=F

[25] XIAO 15 search for WIMP scatter on Xe with PandaX-I; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 5–100 GeV. NODE=S030DI2;LINKAGE=Z

[26] AVRORIN 14 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the Sun in data taken between 1998 and 2003. See their Table 1 for limits assuming annihilation into neutrino pairs. NODE=S030DI2;LINKAGE=AA

[27] AARTSEN 13 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the sun in data taken between June 2010 and May 2011. NODE=S030DI2;LINKAGE=B

[28] ADRIAN-MARTINEZ 13 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the sun in data taken between Jan. 2007 and Dec. 2008. NODE=S030DI2;LINKAGE=C

[29] AGNESE 13 use data taken between Oct. 2006 and July 2007. NODE=S030DI2;LINKAGE=A

[30] BOLIEV 13 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the sun in data taken from 1978 to 2009. See also SUVOROVA 13 for an older analysis of the same data. NODE=S030DI2;LINKAGE=E

[31] LI 13B search for WIMP scatter on Ge; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 4–100 GeV. NODE=S030DI2;LINKAGE=Y

[32] ABBASI 12 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the Sun. The amount of X^0 depends on the X^0-proton cross section. NODE=S030DI2;LINKAGE=AI

[33] Reanalysis of ANGLOHER 09 data with all three nuclides. See also BROWN 12. NODE=S030DI2;LINKAGE=AN
[34] See also APRILE 14A. NODE=S030DI2;LINKAGE=PA
[35] See their Fig. 6 for a limit on inelastically scattering X^0 for m_{X^0} = 70 GeV. NODE=S030DI2;LINKAGE=KI
[36] AHMED 11 search for X^0 inelastic scattering. See their Fig. 8–10 for limits. NODE=S030DI2;LINKAGE=AE
[37] AHMED 11A combine CDMS and EDELWEISS data. NODE=S030DI2;LINKAGE=ED
[38] AJELLO 11 search for $e^{\pm}$ flux from X^0 annihilations in the Sun. Models in which X^0 annihilates into an intermediate long-lived weakly interacting particles or X^0 scatters inelastically are constrained. See their Fig. 6–8 for limits. NODE=S030DI2;LINKAGE=AJ
[39] APRILE 11 reanalyze APRILE 10 data. NODE=S030DI2;LINKAGE=AP
[40] APRILE 11A search for X^0 inelastic scattering. See their Fig. 2 and 3 for limits. See also APRILE 14A. NODE=S030DI2;LINKAGE=PR
[41] Supersedes ARMENGAUD 10. A limit on inelastic cross section is also given. NODE=S030DI2;LINKAGE=RM
[42] HORN 11 perform detector calibration by neutrons. Earlier results are only marginally affected. NODE=S030DI2;LINKAGE=HO
[43] AKIMOV 10 give cross section limits for inelastically scattering dark matter. See their Fig. 4. NODE=S030DI2;LINKAGE=AO
[44] Superseded by AHMED 10. NODE=S030DI2;LINKAGE=AH
[45] ANGLE 09 search for X^0 inelastic scattering. See their Fig. 4 for limits. NODE=S030DI2;LINKAGE=AL
[46] GIULIANI 05 analyzes the spin-independent X^0-nucleon cross section limits with both isoscalar and isovector couplings. See their Fig. 3 and 4 for limits on the couplings. NODE=S030DI2;LINKAGE=GL

For m_{X^0} = 1 TeV

NODE=S030DI3

For limits from X^0 annihilation in the Sun, the assumed annihilation final state is shown in parenthesis in the comment. NODE=S030DI3

VALUE (pb)	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*	
						NODE=S030DI3
• • • We do not use the following data for averages, fits, limits, etc. • • •						
$<4 \times 10^{-3}$	90	[1] ANGLOHER	24A		WIMP search	
$<2.8 \times 10^{-10}$	90	[2] AALBERS	23	LZ	SI scatter on Xe	
$<1 \times 10^{-7}$	90	[3] ABE	23E	XMAS	WIMP search	
$<5 \times 10^{-10}$	90	[4] MENG	21B	PNDX	Xe WIMP search	
		[5] ADHIKARI	20	DEAP	Ar	
$<4 \times 10^{-9}$	90	[6] WANG	20G	PNDX	Xe TPC	
$<3 \times 10^{-6}$	90	[7] YAGUNA	19		Ar; I-spin viol DM	
$<3.8 \times 10^{-8}$	90	[8] AGNES	18A	DS50	Ar	
$<8.24 \times 10^{-10}$	90	[9] APRILE	18	XE1T	Xe	
$<2 \times 10^{-9}$	90	[10] AKERIB	17	LUX	Xe	
<0.3	90	[11] CHEN	17E	PNDX	$\chi N \rightarrow \chi^* \rightarrow \chi\gamma$	
$<1.2 \times 10^{-9}$	90	[12] CUI	17A	PNDX	SI WIMPs on Xe	
$<8.6 \times 10^{-8}$	90	AGNES	16	DS50	Ar	
$<2 \times 10^{-7}$	90	AGNES	15	DS50	Ar	
$<2 \times 10^{-7}$	90	[13] AGNESE	15B	CDM2	Ge	
$<1 \times 10^{-8}$	90	AKERIB	14	LUX	Xe	
$<2.2 \times 10^{-6}$	90	[14] AVRORIN	14	BAIK	H, solar ν (W^+W^-)	
$<5.5 \times 10^{-5}$	90	[14] AVRORIN	14	BAIK	H, solar ν ($b\overline{b}$)	OCCUR=2
$<6.8 \times 10^{-7}$	90	[14] AVRORIN	14	BAIK	H, solar ν ($\tau^+\tau^-$)	OCCUR=3
$<3.46 \times 10^{-7}$	90	[15] AARTSEN	13	ICCB	H, solar ν (W^+W^-)	
$<7.75 \times 10^{-6}$	90	[15] AARTSEN	13	ICCB	H, solar ν ($b\overline{b}$)	OCCUR=2
$<6.9 \times 10^{-7}$	90	[16] ADRIAN-MAR..	13	ANTR	H, solar ν (W^+W^-)	
$<1.5 \times 10^{-5}$	90	[16] ADRIAN-MAR..	13	ANTR	H, solar ν ($b\overline{b}$)	OCCUR=2
$<1.8 \times 10^{-7}$	90	[16] ADRIAN-MAR..	13	ANTR	H, solar ν ($\tau^+\tau^-$)	OCCUR=3
$<4.3 \times 10^{-6}$	90	[17] BOLIEV	13	BAKS	H, solar ν (W^+W^-)	
$<3.4 \times 10^{-5}$	90	[17] BOLIEV	13	BAKS	H, solar ν ($b\overline{b}$)	OCCUR=2
$<1.2 \times 10^{-6}$	90	[17] BOLIEV	13	BAKS	H, solar ν ($\tau^+\tau^-$)	OCCUR=3
$<2.12 \times 10^{-7}$	90	[18] ABBASI	12	ICCB	H, solar ν (W^+W^-)	
$<6.56 \times 10^{-6}$	90	[18] ABBASI	12	ICCB	H, solar ν ($b\overline{b}$)	OCCUR=2
$<4 \times 10^{-7}$	90	AKIMOV	12	ZEP3	Xe	
$<1.1 \times 10^{-5}$	90	[19] ANGLOHER	12	CRES	$CaWO_4$	
$<2 \times 10^{-8}$	90	[20] APRILE	12	X100	Xe	
$<2 \times 10^{-6}$	90	BEHNKE	12	COUP	CF_3I	
$<4 \times 10^{-6}$		FELIZARDO	12	SMPL	C_2ClF_5	
$<1.5 \times 10^{-6}$	90	KIM	12	KIMS	CsI	
		[21] AHMED	11	CDM2	Ge, inelastic	
$<1.5 \times 10^{-7}$	90	[22] AHMED	11A	RVUE	Ge	
$<2 \times 10^{-7}$	90	[23] APRILE	11	X100	Xe	
$<8 \times 10^{-8}$	90	[20] APRILE	11B	X100	Xe	
$<2 \times 10^{-7}$	90	[24] ARMENGAUD	11	EDE2	Ge	
		[25] HORN	11	ZEP3	Xe	
$<2 \times 10^{-7}$	90	AHMED	10	CDM2	Ge	
$<4 \times 10^{-7}$	90	APRILE	10	X100	Xe	
$<6 \times 10^{-7}$	90	ARMENGAUD	10	EDE2	Ge	
$<3.5 \times 10^{-7}$	90	[26] AHMED	09	CDM2	Ge	

[1] ANGLOHER 24A search for WIMP scatter on NaI target. No signal observed. Limits placed in σ^{SI} vs m plane. NODE=S030DI3;LINKAGE=S

[2] AALBERS 23 give first LZ limits on WIMP-nucleon scatter from Xe. $\sigma^{SI} < 2.8\times10^{-10}$ pb for m(χ) = 1 TeV. NODE=S030DI3;LINKAGE=Q

[3] ABE 23E search for WIMP scatter on Xe in XMASS. No signal observed. Require $\sigma^{SI} < 2\times10^{-7}$ pb for m(χ) = 1000 GeV. NODE=S030DI3;LINKAGE=R

[4] MENG 21B search for SI WIMP interaction with 3.7 t Xe and 0.63 t yr exposure. No signal observed. Limits placed in m(DM) vs. σ^{SI} plane. NODE=S030DI3;LINKAGE=P

[5] ADHIKARI 20 search for SI WIMP scatter from Ar in AJAJ 19 data. No signal observed. Limits placed on σ^{p} vs. m(WIMP) for various assumed operators and models. NODE=S030DI3;LINKAGE=N

[6] WANG 20G search for SI WIMP scatter on Xe with 132 t d exposure of PANDAX-II. NODE=S030DI3;LINKAGE=O

[7] YAGUNA 19 recasts DEAP-3600 single-phase liquid argon results in limit for isospin violating DM; for $f_n/f_p = -0.69$, requires $\sigma^{SI}(\chi p) < 3\times10^{-6}$ pb for m(χ) = 1 TeV. NODE=S030DI3;LINKAGE=K

[8] AGNES 18A search for WIMP scatter on 46.4 kg Ar; no signal; require $\sigma^{SI}(\chi N) < 3.8\times10^{-8}$ pb for m(χ) = 1 TeV. NODE=S030DI3;LINKAGE=J

[9] APRILE 18 search for WIMP scatter on 1.3 t Xe; no signal seen; require $\sigma^{SI}(\chi p) < 8.24\times10^{-10}$ pb for m(χ) = 1 TeV. NODE=S030DI3;LINKAGE=I

[10] AKERIB 17 search for WIMP scatter on Xe using complete LUX data set; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m(χ) $\sim$ 5–1×10^{5} GeV. NODE=S030DI3;LINKAGE=L

[11] CHEN 17E search for inelastic WIMP scatter on Xe; require $\sigma^{SI}(\chi N) < 0.3$ pb for m(χ) = 1 TeV and (mass difference) = 300 keV. NODE=S030DI3;LINKAGE=H

[12] CUI 17A search for WIMP scatter using 54 ton-day exposure of Xe; limits placed in $\sigma^{SI}(\chi N)$ vs. m(χ) plane for m $\sim$ 10–1×10^{4} GeV. NODE=S030DI3;LINKAGE=M

[13] AGNESE 15B reanalyse AHMED 10 data. NODE=S030DI3;LINKAGE=E

[14] AVRORIN 14 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the Sun in data taken between 1998 and 2003. See their Table 1 for limits assuming annihilation into neutrino pairs. NODE=S030DI3;LINKAGE=AA

[15] AARTSEN 13 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the sun in data taken between June 2010 and May 2011. NODE=S030DI3;LINKAGE=A

[16] ADRIAN-MARTINEZ 13 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the sun in data taken between Jan. 2007 and Dec. 2008. NODE=S030DI3;LINKAGE=B

[17] BOLIEV 13 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the sun in data taken from 1978 to 2009. See also SUVOROVA 13 for an older analysis of the same data. NODE=S030DI3;LINKAGE=D

[18] ABBASI 12 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the Sun. The amount of X^0 depends on the X^0-proton cross section. NODE=S030DI3;LINKAGE=AI

[19] Reanalysis of ANGLOHER 09 data with all three nuclides. See also BROWN 12. NODE=S030DI3;LINKAGE=AN

[20] See also APRILE 14A. NODE=S030DI3;LINKAGE=PA

[21] AHMED 11 search for X^0 inelastic scattering. See their Fig. 8–10 for limits. NODE=S030DI3;LINKAGE=AE

[22] AHMED 11A combine CDMS and EDELWEISS data. NODE=S030DI3;LINKAGE=ED

[23] APRILE 11 reanalyze APRILE 10 data. NODE=S030DI3;LINKAGE=AP

[24] Supersedes ARMENGAUD 10. A limit on inelastic cross section is also given. NODE=S030DI3;LINKAGE=RM

[25] HORN 11 perform detector calibration by neutrons. Earlier results are only marginally affected. NODE=S030DI3;LINKAGE=HO

[26] Superseded by AHMED 10. NODE=S030DI3;LINKAGE=AH

For Super-heavy dark matter ($m_{X^0} > 10^{10}$ GeV)

NODE=S030DI6

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
	[1] AALBERS	24A	LZ	ultraheavy DM
	[2] ABREU	23	AUGE	DM decay to photons
	[3] ACEVEDO	23		DM tracks in ancient mica

NODE=S030DI6

[1] AALBERS 24A search for ultraheavy dark matter in range 10×10^{8}–10×10^{17} GeV via multiple scatter. No signal observed. Limits placed in σ^{SI} vs m plane for two different nuclear scaling possibilities. NODE=S030DI6;LINKAGE=C

[2] ABREU 23 search for superheavy DM X decay to $q\overline{q}$ pairs via instanton, then to γs. No signal detected. Exclude m(X) > 3×10^{13} GeV for dark gauge coupling $\alpha_X = 0.09$. NODE=S030DI6;LINKAGE=A

[3] ACEVEDO 23 re-examine data from ancient mica to place limits on superheavy DM in the mass range 10^{7}–10^{25} GeV. See Fig. 3 for σ^{SI} and σ^{SD} limits. NODE=S030DI6;LINKAGE=B

Spin-Dependent Cross Section Limits for Dark Matter Particle (X^0) on Proton

NODE=S030DPX

For m_{χ^0} in GeV range

NODE=S030DP5

We provide here limits fo m_{χ^0} < 5 GeV

NODE=S030DP5

NODE=S030DP5

VALUE (pb)	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$< 1 \times 10^{9}$	90	[1] ANGLOHER	24B	CRES	low mass wimp search
$< 1 \times 10^{4}$	90	[2] AALBERS	23A	LZ	SD scatter on Xe
$< 2 \times 10^{5}$	90	[3] ADHIKARI	22B	C100	sub-GeV WIMP via SD coupling/Migdal effect
$< 9 \times 10^{4}$	90	[4] ANGLOHER	22	CRES	SD limit using Li
< 40	90	[5] ANGLOHER	22A	CRES	SD limit using Li and Al
$< 8 \times 10^{4}$	90	[6] ABDELHAME...	20A	CRES	$LiAlO_2$
$< 1 \times 10^{6}$	95	[7] ABDELHAME...	19	CRES	GeV-scale WIMPs on Li
$< 3 \times 10^{-4}$	90	[8] AMOLE	19	PICO	C_3F_8
$< 1.7 \times 10^{4}$	90	[9] APRILE	19C	XE1T	light DM on Xe via Migdal/brem effect
$< 8 \times 10^{6}$	90	[10] ARMENGAUD	19	EDEL	GeV-scale WIMPs on Ge
< 70	90	[11] XIA	19A	PNDX	SD WIMP on Xe
<100	90	[12] AGNESE	18	SCDM	GeV-scale WIMPs on Ge
< 1	90	[13] AKERIB	17A	LUX	Xe
< 0.6	90	[14] FU	17	PNDX	SD WIMP on Xe
< 0.2	90	[15] AMOLE	15	PICO	C_3F_8
$< 1.6 \times 10^{-1}$	90	[16] ARCHAMBAU...	12	PICA	^{19}F

[1] ANGLOHER 24B search for low mass wimps. No signal observed. Limits placed in σ vs. m plane. Quoted limit for m = 100 MeV. NODE=S030DP5;LINKAGE=P

[2] AALBERS 23A search for GeV-scale WIMP scatter on Xe. No signal observed. Limits placed in $\sigma^{SD}(\chi p)$ vs. m(χ) plane. Quoted limit is for m(χ) = 1 GeV via Migdal scattering. NODE=S030DP5;LINKAGE=O

[3] ADHIKARI 22B search for sub-GeV WIMPs via SI and SD detection; no signal detected; limits placed in m(χ) vs. σ plane for m(χ): 0.2–3 GeV; quoted limit is for SD m(χ) = 1 GeV. NODE=S030DP5;LINKAGE=L

[4] ANGLOHER 22 search for SD WIMP-proton scatter from Li target; no signal detected; limits placed in σ vs. m(WIMP) plane; limit quoted for m(WIMP) = 1 GeV. NODE=S030DP5;LINKAGE=M

[5] ANGLOHER 22A search for spin-dependent DM scatter on Li and Al for m(DM) $\sim$ 0.2–6 GeV; no signal observed; limits set in $\sigma(\chi p)$ vs. m(DM) plane; quoted limit is for m(DM) = 1 GeV. NODE=S030DP5;LINKAGE=N

[6] ABDELHAMEED 20A use $LiAlO_2$ target in CRESST to search for SD WIMP scatter on p; no signal; quoted limit is for m(DM) = 1 GeV. NODE=S030DP5;LINKAGE=K

[7] ABDELHAMEED 19 search for SD WIMP scatter on ^{7}Li; limits placed on $\sigma^{SD}(\chi p)$ for m(χ) $\sim$ 0.8–20 GeV; quoted limit is for m(χ) = 1 GeV. NODE=S030DP5;LINKAGE=B

[8] AMOLE 19 search for SD WIMP scatter on C_3F_8 in PICO-60 bubble chamber; no signal: set limit for spin dependent coupling $\sigma^{SD}(\chi p) < 2 \times 10^{-4}$ pb for m(χ) = 5 GeV. NODE=S030DP5;LINKAGE=F

[9] APRILE 19C search for light DM on Xe via Migdal/brem effect; no signal, require $\sigma^{SD}(\chi p) <$ 1.7×10^4 pb for m(χ) = 1 GeV. NODE=S030DP5;LINKAGE=A

[10] ARMENGAUD 19 search for GeV scale WIMP scatter on Ge; limits placed in $\sigma^{SD}(\chi p)$ vs. m(χ) plane for m(χ) $\sim$ 0.5–10 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DP5;LINKAGE=G

[11] XIA 19A search for WIMP scatter on Xe in PandaX-II; limits placed in $\sigma^{SD}(\chi p)$ vs. m(χ) plane for m(χ) $\sim$ 5–1×10^5 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DP5;LINKAGE=J

[12] AGNESE 18 search for GeV scale WIMPs with CDMSlite; limits placed in $\sigma^{SD}(\chi p)$ vs. m(χ) plane for m(χ) $\sim$ 1.5–20 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DP5;LINKAGE=C

[13] AKERIB 17A search for SD WIMP scatter on Xe using 129.5 kg yr exposure; limits placed in $\sigma^{SD}(\chi p)$ vs. m(χ) plane for m(χ) $\sim$ 6–1×10^5 GeV. NODE=S030DP5;LINKAGE=D

[14] FU 17 search for SD WIMP scatter on Xe; limits set in $\sigma^{SD}(\chi p)$ vs. m(χ) plane for m(χ) $\sim$ 4–1×10^3 GeV.; quoted limit is for m(χ) = 5 GeV. NODE=S030DP5;LINKAGE=I

[15] AMOLE 15 search for WIMP scatter on C_3F_8 in PICO-2L; limits placed in $\sigma^{SD}(\chi p)$ vs. m(χ) plane for m(χ) $\sim$ 4–1×10^4 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DP5;LINKAGE=E

[16] ARCHAMBAULT 12 search for SD WIMP scatter in ^{19}F with PICASSO; limits set in $\sigma^{SD}(\chi p)$ vs. m(χ) plane for m $\sim$ 4–500 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DP5;LINKAGE=H

For $m_{\chi^0} = 20$ GeV

NODE=S030DP1

For limits from X^0 annihilation in the Sun, the assumed annihilation final state is shown in parenthesis in the comment.

NODE=S030DP1

NODE=S030DP1

VALUE (pb)	CL%	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				

$< 6 \times 10^{-5}$	90	[1] AALBERS	23	LZ	SD scatter on Xe	
$< 3.5 \times 10^{-5}$	90	[2] ABBASI	22B	ICCB	IceCube SD limit	
$< 1.5 \times 10^{5}$	90	[3] ANGLOHER	22	CRES	SD limit using Li	
$< 2 \times 10^{-4}$	90	[4] HUANG	22	PNDX	SD DM limits	
$< 9 \times 10^{-5}$	90	[5] AARTSEN	20C	ICCB	SD WIMP on p	
$< 2 \times 10^{5}$	90	[6] ABDELHAME...	20A	CRES	$LiAlO_2$	
$< 5 \times 10^{-3}$		[7] FELIZARDO	20	SMPL	WIMPs via SIMPLE	
$< 3 \times 10^{5}$	95	[8] ABDELHAME...	19	CRES	^{7}Li	
$< 2.5 \times 10^{-5}$	90	[9] AMOLE	19	PICO	C_3F_8	
$< 2.5 \times 10^{-4}$	90	[10] APRILE	19A	XE1T	Xe, SD	
$< 1 \times 10^{-3}$	90	[11] XIA	19A	PNDX	SD WIMP on Xe	
< 30	95	[12] AGNESE	18	SCDM	Ge	
$< 1 \times 10^{-3}$	90	[13] AKERIB	17A	LUX	Xe	
$< 1.32 \times 10^{-2}$	90	[14] BEHNKE	17	PICA	C_4F_{10}	
$< 2 \times 10^{-3}$	90	[15] FU	17	PNDX	SD WIMP on Xe	
$< 5 \times 10^{-4}$	90	[16] AMOLE	16A	PICO	C_3F_8	
$< 2 \times 10^{-6}$	90	[17] KHACHATRY...	16AJ	CMS	8 TeV $pp \to Z + \not{E}_T$; $Z \to \ell\overline{\ell}$	
$< 1.2 \times 10^{-3}$	90	AMOLE	15	PICO	C_3F_8	
$< 1.43 \times 10^{-3}$	90	CHOI	15	SKAM	H, solar ν ($b\overline{b}$)	
$< 1.42 \times 10^{-4}$	90	CHOI	15	SKAM	H, solar ν ($\tau^+\tau^-$)	OCCUR=2
$< 5 \times 10^{-3}$	90	FELIZARDO	14	SMPL	C_2ClF_5	
$< 1.29 \times 10^{-2}$	90	[18] AARTSEN	13	ICCB	H, solar ν ($\tau^+\tau^-$)	
$< 3.17 \times 10^{-2}$	90	[19] APRILE	13	X100	Xe	
$< 3 \times 10^{-2}$	90	[20] ARCHAMBAU...	12	PICA	F (C_4F_{10})	
$< 6 \times 10^{-2}$	90	BEHNKE	12	COUP	CF_3I	
< 20	90	DAW	12	DRFT	F (CF_4)	
$< 7 \times 10^{-3}$		FELIZARDO	12	SMPL	C_2ClF_5	
< 0.15	90	KIM	12	KIMS	CsI	
$< 1 \times 10^{5}$	90	[21] AHLEN	11	DMTP	F (CF_4)	
< 0.1	90	[21] BEHNKE	11	COUP	CF_3I	
$< 1.5 \times 10^{-2}$	90	[22] TANAKA	11	SKAM	H, solar ν ($b\overline{b}$)	
< 0.2	90	ARCHAMBAU...	09	PICA	F	
< 4	90	LEBEDENKO	09A	ZEP3	Xe	
< 0.6	90	ANGLE	08A	XE10	Xe	
< 100	90	ALNER	07	ZEP2	Xe	
< 1	90	LEE	07A	KIMS	CsI	
< 20	90	[23] AKERIB	06	CDMS	^{73}Ge, ^{29}Si	
< 2	90	SHIMIZU	06A	CNTR	F (CaF_2)	
< 0.5	90	ALNER	05	NAIA	NaI	
< 1.5	90	BARNABE-HE...	05	PICA	F (C_4F_{10})	
< 1.5	90	GIRARD	05	SMPL	F (C_2ClF_5)	
< 35	90	MIUCHI	03	BOLO	LiF	
< 30	90	TAKEDA	03	BOLO	NaF	

[1] AALBERS 23 yield first SD LZ limits on WIMP-p scatter using Xe. $\sigma^{SD}(\chi p) < 6 \times 10^{-5}$ pb for m(χ) = 20 GeV. NODE=S030DP1;LINKAGE=V

[2] ABBASI 22B search for WIMP annihilation to $b\overline{b}$, $\tau\overline{\tau}$, $\nu\overline{\nu}$ in Sun with 7 years data; no signal; limits set in m(χ) vs. $\sigma^{SD}(\chi p)$ plane for m(χ): 10–100 GeV; quoted limit for $\nu\overline{\nu}$ channel. NODE=S030DP1;LINKAGE=S

[3] ANGLOHER 22 search for SD WIMP-proton scatter from Li target; no signal detected; limits placed in σ vs. m(WIMP) plane. NODE=S030DP1;LINKAGE=T

[4] HUANG 22 search for SD DM scatter on Xe; no signal observed; limits placed in $\sigma(\chi n)$ vs. m(DM) plane; quoted limit is for m(DM) = 20 GeV. NODE=S030DP1;LINKAGE=U

[5] AARTSEN 20C place combined IceCube and Pico-60 velocity-independent limits on spin-dependent WIMP-p scatter $\sigma^{SD}(\chi p) <$ 9–5 pb for m(WIMP) = 20 GeV assuming dominant annihilation to $\tau\overline{\tau}$. NODE=S030DP1;LINKAGE=P

[6] ABDELHAMEED 20A use $LiAlO_2$ target in CRESST to search for spin-dependent WIMP scatter on p; limits set for m(WIMP): 0.3–30 GeV in Fig. 8. Quoted limit is for M(WIMP) = 30 GeV. NODE=S030DP1;LINKAGE=R

[7] FELIZARDO 20 presents 2014 SIMPLE bounds on WIMP DM using C_2ClF_5 target. NODE=S030DP1;LINKAGE=Q

[8] ABDELHAMEED 19 uses Li_2MoO_4 target to set limit for spin dependent coupling $\sigma^{SD}(\chi p) < 3. \times 10^{5}$ pb for m(χ) = 20 GeV. NODE=S030DP1;LINKAGE=I

[9] AMOLE 19 search for SD WIMP scatter on C_3F_8 in PICO-60 bubble chamber; no signal: set limit for spin dependent coupling $\sigma^{SD}(\chi p) < 2.5 \times 10^{-5}$ pb for m(χ) = 20 GeV. NODE=S030DP1;LINKAGE=J

[10] APRILE 19A search for SD WIMP scatter on 1 t yr Xe; no signal, limits placed in $\sigma^{SD}(\chi p)$ vs. m(χ) plane for m $\sim$ 6–1000 GeV. NODE=S030DP1;LINKAGE=L

[11] XIA 19A search for WIMP scatter on Xe in PandaX-II; limits placed in $\sigma^{SD}(\chi p)$ vs. m(χ) plane for m(χ) $\sim$ 5–1 $\times 10^{5}$ GeV. NODE=S030DP1;LINKAGE=O

[12] AGNESE 18 give limits for $\sigma^{SD}(p\chi)$ for m(WIMP) between 1.5 and 20 GeV using CDMSlite mode data. NODE=S030DP1;LINKAGE=G

[13] AKERIB 17A search for SD WIMP scatter on Xe using 129.5 kg yr exposure; limits placed in $\sigma^{SD}(\chi p)$ vs. m(χ) plane for m(χ) $\sim$ 6–1 $\times 10^5$ GeV. NODE=S030DP1;LINKAGE=K

[14] BEHNKE 17 show final Picasso results based on 231.4 kg d exposure at SNOLab for WIMP scatter on C_4F_{10} search via superheated droplet; require σ(SD) $<$ 1.32 $\times 10^{-2}$ pb for m(WIMP) = 20 GeV. NODE=S030DP1;LINKAGE=E

[15] FU 17 search for SD WIMP scatter on Xe; limits set in $\sigma^{SD}(\chi p)$ vs. m(χ) plane for m(χ) $\sim$ 4–1 $\times 10^3$ GeV. NODE=S030DP1;LINKAGE=N

[16] AMOLE 16A require SD WIMP-p scattering $<$ 5 $\times 10^{-4}$ pb for m(WIMP) = 20 GeV; bubbles from C_3F_8 target. NODE=S030DP1;LINKAGE=C

[17] KHACHATRYAN 16AJ require SD WIMP-p $<$ 2 $\times 10^{-6}$ pb for m(WIMP) = 20 GeV from $p p \rightarrow Z + \not{E}_T$; $Z \rightarrow \ell\bar{\ell}$ signal. NODE=S030DP1;LINKAGE=D

[18] AARTSEN 13 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the sun in data taken between June 2010 and May 2011. NODE=S030DP1;LINKAGE=B

[19] The value has been provided by the authors. APRILE 13 note that the proton limits on Xe are highly sensitive to the theoretical model used. See also APRILE 14A. NODE=S030DP1;LINKAGE=A

[20] ARCHAMBAULT 12 search for WIMP scatter on C_4F_{10}; limits set in $\sigma^{SD}(\chi p)$ vs. m(χ) plane for m $\sim$ 4–500 GeV. NODE=S030DP1;LINKAGE=M

[21] Use a direction-sensitive detector. NODE=S030DP1;LINKAGE=AH

[22] TANAKA 11 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the Sun. The amount of X^0 depends on the X^0-proton cross section. NODE=S030DP1;LINKAGE=TA

[23] See also AKERIB 05. NODE=S030DP1;LINKAGE=AK

For m_{X^0} = 100 GeV

NODE=S030DP2

For limits from X^0 annihilation in the Sun, the assumed annihilation final state is shown in parenthesis in the comment. NODE=S030DP2

NODE=S030DP2

VALUE (pb)	CL%	DOCUMENT ID	TECN	COMMENT	
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$< 1.5 \times 10^{-4}$	90	[1] AALBERS 23	LZ	SD scatter on Xe	
< 1	90	[2] ADHIKARI 23C	C100	SD WIMP scatter on I	
< 25.7	90	[3] SHIMADA 23	NAGE	directional WIMP search	
$< 2.5 \times 10^{-5}$	90	[4] ABBASI 22B	ICCB	IceCube SD limit	
$< 2 \times 10^{-4}$	90	[5] HUANG 22	PNDX	SD DM limits	
< 50	90	[6] IKEDA 21	NAGE	directional gas TPC	
$< 3.34 \times 10^{-4}$	90	[7] AARTSEN 20C	ICCB	SD WIMP on p	
$< 6.5 \times 10^{-3}$		[8] FELIZARDO 20	SMPL	WIMPs via SIMPLE	
$< 4 \times 10^{-5}$	90	[9] AMOLE 19	PICO	C_3F_8	
$< 4 \times 10^{-4}$	90	[10] APRILE 19A	XE1T	Xe, SD	
$< 8 \times 10^{-4}$	90	[11] XIA 19A	PNDX	SD WIMP on Xe	
$< 8 \times 10^{-4}$	90	[12] AKERIB 17A	LUX	Xe	
$< 5 \times 10^{-5}$	90	[13] AMOLE 17	PICO	C_3F_8	
$< 3.3 \times 10^{-2}$	90	[14] APRILE 17A	X100	Xe inelastic	
$< 2.8 \times 10^{-1}$	90	[15] BATTAT 17	DRFT	CS_2	
$< 1.5 \times 10^{-3}$	90	[16] FU 17	PNDX	Xe	
$<$ 0.553–0.019	95	[17] AABOUD 16D	ATLS	$p p \rightarrow j + \not{E}_T$	OCCUR=2
$< 1 \times 10^{-5}$	90	[18] AABOUD 16F	ATLS	$p p \rightarrow \gamma + \not{E}_T$	
$< 1 \times 10^{-4}$	90	[19] AARTSEN 16C	ICCB	solar ν ($W^+ W^-$)	
$< 2 \times 10^{-4}$	90	[20] ADRIAN-MAR..16	ANTR	solar ν ($W W$, $b\bar{b}$, $\tau\bar{\tau}$)	OCCUR=4
$< 3 \times 10^{-3}$	90	[21] AKERIB 16A	LUX	Xe	
$< 5 \times 10^{-4}$	90	[22] AMOLE 16	PICO	CF_3I	
$< 1.5 \times 10^{-3}$	90	AMOLE 15	PICO	C_3F_8	
$< 3.19 \times 10^{-3}$	90	CHOI 15	SKAM	H, solar ν ($b\bar{b}$)	
$< 2.80 \times 10^{-4}$	90	CHOI 15	SKAM	H, solar ν ($W^+ W^-$)	OCCUR=2
$< 1.24 \times 10^{-4}$	90	CHOI 15	SKAM	H, solar ν ($\tau^+ \tau^-$)	OCCUR=3
$< 8 \times 10^{2}$	90	[23] NAKAMURA 15	NAGE	CF_4	
$< 1.7 \times 10^{-3}$	90	[24] AVRORIN 14	BAIK	H, solar ν ($W^+ W^-$)	
$< 4.5 \times 10^{-2}$	90	[24] AVRORIN 14	BAIK	H, solar ν ($b\bar{b}$)	OCCUR=2
$< 7.1 \times 10^{-4}$	90	[24] AVRORIN 14	BAIK	H, solar ν ($\tau^+ \tau^-$)	OCCUR=3
$< 6 \times 10^{-3}$	90	FELIZARDO 14	SMPL	C_2ClF_5	
$< 2.68 \times 10^{-4}$	90	[25] AARTSEN 13	ICCB	H, solar ν ($W^+ W^-$)	
$< 1.47 \times 10^{-2}$	90	[25] AARTSEN 13	ICCB	H, solar ν ($b\bar{b}$)	OCCUR=2
$< 8.5 \times 10^{-4}$	90	[26] ADRIAN-MAR..13	ANTR	H, solar ν ($W^+ W^-$)	
$< 5.5 \times 10^{-2}$	90	[26] ADRIAN-MAR..13	ANTR	H, solar ν ($b\bar{b}$)	OCCUR=2
$< 3.4 \times 10^{-4}$	90	[26] ADRIAN-MAR..13	ANTR	H, solar ν ($\tau^+ \tau^-$)	OCCUR=3
$< 1.00 \times 10^{-2}$	90	[27] APRILE 13	X100	Xe	
$< 7.1 \times 10^{-4}$	90	[28] BOLIEV 13	BAKS	H, solar ν ($W^+ W^-$)	
$< 8.4 \times 10^{-3}$	90	[28] BOLIEV 13	BAKS	H, solar ν ($b\bar{b}$)	OCCUR=2

$< 3.1 \times 10^{-4}$	90	[28] BOLIEV	13	BAKS	H, solar ν ($\tau^+\tau^-$)	OCCUR=3
$< 7.07 \times 10^{-4}$	90	[29] ABBASI	12	ICCB	H, solar ν (W^+W^-)	
$< 4.53 \times 10^{-2}$	90	[29] ABBASI	12	ICCB	H, solar ν ($b\overline{b}$)	OCCUR=2
$< 7 \times 10^{-2}$	90	[30] ARCHAMBAU...	12	PICA	F (C_4F_{10})	
$< 1 \times 10^{-2}$	90	BEHNKE	12	COUP	CF_3I	
< 1.8	90	DAW	12	DRFT	F (CF_4)	
$< 9 \times 10^{-3}$		FELIZARDO	12	SMPL	C_2ClF_5	
$< 2 \times 10^{-2}$	90	KIM	12	KIMS	CsI	
$< 2 \times 10^{3}$	90	[23] AHLEN	11	DMTP	F (CF_4)	
$< 7 \times 10^{-2}$	90	BEHNKE	11	COUP	CF_3I	
$< 2.7 \times 10^{-4}$	90	[31] TANAKA	11	SKAM	H, solar ν (W^+W^-)	
$< 4.5 \times 10^{-3}$	90	[31] TANAKA	11	SKAM	H, solar ν ($b\overline{b}$)	OCCUR=2
		[32] FELIZARDO	10	SMPL	C_2ClF_3	
$< 6 \times 10^{3}$	90	[23] MIUCHI	10	NAGE	CF_4	
< 0.4	90	ARCHAMBAU...	09	PICA	F	
< 0.8	90	LEBEDENKO	09A	ZEP3	Xe	
< 1.0	90	ANGLE	08A	XE10	Xe	
< 15	90	ALNER	07	ZEP2	Xe	
< 0.2	90	LEE	07A	KIMS	CsI	
$< 1 \times 10^{4}$	90	[23] MIUCHI	07	NAGE	F (CF_4)	
< 5	90	[33] AKERIB	06	CDMS	^{73}Ge, ^{29}Si	
< 2	90	SHIMIZU	06A	CNTR	F (CaF_2)	
< 0.3	90	ALNER	05	NAIA	NaI	
< 2	90	BARNABE-HE...	05	PICA	F (C_4F_{10})	
< 100	90	BENOIT	05	EDEL	^{73}Ge	
< 1.5	90	GIRARD	05	SMPL	F (C_2ClF_5)	
< 0.7		[34] GIULIANI	05A	RVUE		
		[35] GIULIANI	04	RVUE		
		[36] GIULIANI	04A	RVUE		
< 35	90	MIUCHI	03	BOLO	LiF	
< 40	90	TAKEDA	03	BOLO	NaF	

[1] AALBERS 23 yield first SD LZ limits on WIMP-p scatter using Xe. $\sigma^{SD}(\chi p) < 1.5 \times 10^{-4}$ pb for m(χ) = 100 GeV. NODE=S030DP2;LINKAGE=CA

[2] ADHIKARI 23C search for SD WIMP scatter on I. No signal observed. Require $\sigma^{SD}(\chi p) < 1$ pb for m(χ) = 100 GeV. NODE=S030DP2;LINKAGE=DA

[3] SHIMADA 23 search for WIMPs in NEWAGE directional detector. No signal observed. Limits placed in $\sigma^{SD}(\chi p)$ vs. mass plane. Quoted limit for m(χ) = 150 GeV. NODE=S030DP2;LINKAGE=EA

[4] ABBASI 22B search for WIMP annihilation to $b\overline{b}$, $\tau\overline{\tau}$, $\nu\overline{\nu}$ in Sun with 7 years data; no signal; limits set in m(χ) vs. $\sigma^{SD}(\chi p)$ plane for m(χ): 10–100 GeV; quoted limit for $\nu\overline{\nu}$ channel. NODE=S030DP2;LINKAGE=Z

[5] HUANG 22 search for SD DM scatter on Xe; no signal observed; limits placed in $\sigma(\chi n)$ vs. m(DM) plane; quoted limit is for m(DM) = 100 GeV. NODE=S030DP2;LINKAGE=BA

[6] IKEDA 21 use direction sensitive TPC NEWAGE to search for SD WIMPs. No signal observed. Limits set in $\sigma^{SD}(\chi p)$ vs. m plane; $\sigma^{SD}(\chi p) < 50$ pb for m(DM) = 100 GeV. NODE=S030DP2;LINKAGE=Y

[7] AARTSEN 20C place combined IceCube and Pico-60 velocity-independent limits on spin-dependent WIMP-p scatter $\sigma^{SD}(\chi p) < 3.34 \times 10^{-4}$ pb for m(WIMP) = 100 GeV assuming dominant annihilation to $\tau\overline{\tau}$. NODE=S030DP2;LINKAGE=W

[8] FELIZARDO 20 presents 2014 SIMPLE bounds on WIMP DM using C_2ClF_5 target. NODE=S030DP2;LINKAGE=X

[9] AMOLE 19 search for SD WIMP scatter on C_3F_8 in PICO-60 bubble chamber; no signal: set limit for spin dependent coupling $\sigma^{SD}(\chi p) < 4 \times 10^{-5}$ pb for m(χ) = 100 GeV. NODE=S030DP2;LINKAGE=R

[10] APRILE 19A search for SD WIMP scatter on 1 t yr Xe; no signal, limits placed in $\sigma^{SD}(\chi p)$ vs. m(χ) plane for m $\sim$ 6–1000 GeV. NODE=S030DP2;LINKAGE=T

[11] XIA 19A search for WIMP scatter on Xe in PandaX-II; limits placed in $\sigma^{SD}(\chi p)$ vs. m(χ) plane for m(χ) $\sim$ 5–1×10^5 GeV. NODE=S030DP2;LINKAGE=V

[12] AKERIB 17A search for SD WIMP scatter on Xe using 129.5 kg yr exposure; limits placed in $\sigma^{SD}(\chi p)$ vs. m(χ) plane for m(χ) $\sim$ 6–1×10^5 GeV. NODE=S030DP2;LINKAGE=Q

[13] AMOLE 17 require σ(WIMP-p)$^{SD} < 5 \times 10^{-5}$ pb for m(WIMP) = 100 GeV using PICO-60 1167 kg-days exposure at SNOLab. NODE=S030DP2;LINKAGE=G

[14] APRILE 17A require require σ(WIMP-p)(inelastic)$^{SD} < 3.3 \times 10^{-2}$ pb for m(WIMP) = 100 GeV, based on 7640 kg day exposure at LNGS. NODE=S030DP2;LINKAGE=H

[15] BATTAT 17 use directional detection of CS_2 ions to require σ(SD) $< 2.8 \times 10^{-1}$ pb for 100 GeV WIMP with a 55 days exposure at the Boulby Underground Science Facility. NODE=S030DP2;LINKAGE=I

[16] FU 17 from a 33000 kg d exposure at CJPL, PANDAX II derive for m(DM) = 100 GeV, σ^{SD}(WIMP-p) $< 2 \times 10^{-3}$ pb. NODE=S030DP2;LINKAGE=O

[17] AABOUD 16D use ATLAS 13 TeV 3.2 fb^{-1} of data to search for monojet plus missing E_T; agree with SM rates; present limits on large extra dimensions, compressed SUSY spectra and wimp pair production. NODE=S030DP2;LINKAGE=K

[18] AABOUD 16F search for monophoton plus missing E_T events at ATLAS with 13 Tev and 3.2 fb^{-1}; signal agrees with SM background; place limits on SD WIMP-proton scattering vs. mediator mass and large extra dimension models. NODE=S030DP2;LINKAGE=L

[19] AARTSEN 16C search for high energy νs from WIMP annihilation in solar core; limits set on SD WIMP-p scattering (Fig. 8). NODE=S030DP2;LINKAGE=F

[20] ADRIAN-MARTINEZ 16 search for WIMP annihilation into νs from solar core; exclude SD cross section $<$ few 10^{-4} depending on m(WIMP). NODE=S030DP2;LINKAGE=J

[21] AKERIB 16A using 2013 data exclude SD WIMP-proton scattering $> 3 \times 10^{-3}$ pb for m(WIMP) = 100 GeV. NODE=S030DP2;LINKAGE=M

[22] AMOLE 16 use bubble technique on CF_3I target to exclude SD WIMP-p scattering $> 5 \times 10^{-4}$ pb for m(WIMP) = 100 GeV. NODE=S030DP2;LINKAGE=N

[23] Use a direction-sensitive detector. NODE=S030DP2;LINKAGE=AH

[24] AVRORIN 14 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the Sun in data taken between 1998 and 2003. See their Table 1 for limits assuming annihilation into neutrino pairs. NODE=S030DP2;LINKAGE=AA

[25] AARTSEN 13 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the sun in data taken between June 2010 and May 2011. NODE=S030DP2;LINKAGE=B

[26] ADRIAN-MARTINEZ 13 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the sun in data taken between Jan. 2007 and Dec. 2008. NODE=S030DP2;LINKAGE=C

[27] The value has been provided by the authors. APRILE 13 note that the proton limits on Xe are highly sensitive to the theoretical model used. See also APRILE 14A. NODE=S030DP2;LINKAGE=A

[28] BOLIEV 13 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the sun in data taken from 1978 to 2009. See also SUVOROVA 13 for an older analysis of the same data. NODE=S030DP2;LINKAGE=E

[29] ABBASI 12 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the Sun. The amount of X^0 depends on the X^0-proton cross section. NODE=S030DP2;LINKAGE=AI

[30] ARCHAMBAULT 12 search for WIMP scatter on C_4F_{10}; limits set in $\sigma^{SD}(\chi p)$ vs. m(χ) plane for m $\sim$ 4–500 GeV. NODE=S030DP2;LINKAGE=U

[31] TANAKA 11 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the Sun. The amount of X^0 depends on the X^0-proton cross section. NODE=S030DP2;LINKAGE=TA

[32] See their Fig. 3 for limits on spin-dependent proton couplings for X^0 mass of 50 GeV. NODE=S030DP2;LINKAGE=FE

[33] See also AKERIB 05. NODE=S030DP2;LINKAGE=AK

[34] GIULIANI 05A analyze available data and give combined limits. NODE=S030DP2;LINKAGE=GN

[35] GIULIANI 04 reanalyze COLLAR 00 data and give limits for spin-dependent X^0-proton coupling. NODE=S030DP2;LINKAGE=GI

[36] GIULIANI 04A give limits for spin-dependent X^0-proton couplings from existing data. NODE=S030DP2;LINKAGE=GU

For m_{X^0} = 1 TeV

NODE=S030DP3

For limits from X^0 annihilation in the Sun, the assumed annihilation final state is shown in parenthesis in the comment. NODE=S030DP3

NODE=S030DP3

• • • We do not use the following data for averages, fits, limits, etc. • • •

VALUE (pb)	CL%	DOCUMENT ID		TECN	COMMENT	
$< 1.5 \times 10^{-3}$	90	[1] AALBERS	23	LZ	SD scatter on Xe	
< 0.2	90	[2] ADHIKARI	23C	C100	SD WIMP scatter on I	
$< 1.2 \times 10^{-3}$	90	[3] HUANG	22	PNDX	SD DM limits	
<200	90	[4] IKEDA	21	NAGE	directional gas TPC	
$< 4.81 \times 10^{-3}$	90	[5] AARTSEN	20C	ICCB	SD WIMP on p	
$< 3 \times 10^{-4}$	90	[6] AMOLE	19	PICO	C_3F_8	
$< 4 \times 10^{-3}$	90	[7] APRILE	19A	XE1T	Xe, SD	
$< 5 \times 10^{-3}$	90	[8] XIA	19A	PNDX	SD WIMP on Xe	
		[9] ALBERT	18C	HAWC	DM annihilation in Sun to long-lived mediator	
$< 2.05 \times 10^{-5}$	90	[10] AARTSEN	17A	ICCB	ν, sun	
$< 7 \times 10^{-3}$	90	[11] AKERIB	17A	LUX	Xe	
$< 2 \times 10^{-2}$	90	[12] FU	17	PNDX	SD WIMP on Xe	
		[13] ADRIAN-MAR..	16B	ANTR	solar μ from WIMP annih.	
$< 1 \times 10^{-2}$	90	AMOLE	15	PICO	C_3F_8	
$< 1.5 \times 10^{3}$	90	NAKAMURA	15	NAGE	CF_4	
$< 2.7 \times 10^{-3}$	90	[14] AVRORIN	14	BAIK	H, solar ν (W^+W^-)	
$< 6.9 \times 10^{-2}$	90	[14] AVRORIN	14	BAIK	H, solar ν ($b\bar{b}$)	OCCUR=2
$< 8.4 \times 10^{-4}$	90	[14] AVRORIN	14	BAIK	H, solar ν ($\tau^+\tau^-$)	OCCUR=3
$< 4.48 \times 10^{-4}$	90	[15] AARTSEN	13	ICCB	H, solar ν (W^+W^-)	
$< 1.00 \times 10^{-2}$	90	[15] AARTSEN	13	ICCB	H, solar ν ($b\bar{b}$)	OCCUR=2
$< 8.9 \times 10^{-4}$	90	[16] ADRIAN-MAR..	13	ANTR	H, solar ν (W^+W^-)	
$< 2.0 \times 10^{-2}$	90	[16] ADRIAN-MAR..	13	ANTR	H, solar ν ($b\bar{b}$)	OCCUR=2
$< 2.3 \times 10^{-4}$	90	[16] ADRIAN-MAR..	13	ANTR	H, solar ν ($\tau^+\tau^-$)	OCCUR=3
$< 7.57 \times 10^{-2}$	90	[17] APRILE	13	X100	Xe	
$< 5.4 \times 10^{-3}$	90	[18] BOLIEV	13	BAKS	H, solar ν (W^+W^-)	
$< 4.2 \times 10^{-2}$	90	[18] BOLIEV	13	BAKS	H, solar ν ($b\bar{b}$)	OCCUR=2

$<$	1.5×10^{-3}	90	[18] BOLIEV	13	BAKS	H, solar ν ($\tau^+\tau^-$)	OCCUR=3
$<$	2.50×10^{-4}	90	[19] ABBASI	12	ICCB	H, solar ν (W^+W^-)	
$<$	7.86×10^{-3}	90	[19] ABBASI	12	ICCB	H, solar ν ($b\overline{b}$)	OCCUR=2
$<$	8×10^{-2}	90	BEHNKE	12	COUP	CF_3I	
$<$	8	90	DAW	12	DRFT	F (CF_4)	
$<$	6×10^{-2}		FELIZARDO	12	SMPL	C_2ClF_5	
$<$	8×10^{-2}	90	KIM	12	KIMS	CsI	
$<$	8×10^{3}	90	[20] AHLEN	11	DMTP	F (CF_4)	
$<$	0.4	90	BEHNKE	11	COUP	CF_3I	
$<$	2×10^{-3}	90	[21] TANAKA	11	SKAM	H, solar ν ($b\overline{b}$)	
$<$	2×10^{-2}	90	[21] TANAKA	11	SKAM	H, solar ν (W^+W^-)	OCCUR=2
$<$	1×10^{-3}	90	[22] ABBASI	10	ICCB	KK dark matter	
$<$	2×10^{4}	90	[20] MIUCHI	10	NAGE	CF_4	
$<$	8.7×10^{-4}	90	ABBASI	09B	ICCB	H, solar ν (W^+W^-)	
$<$	2.2×10^{-2}	90	ABBASI	09B	ICCB	H, solar ν ($b\overline{b}$)	OCCUR=2
$<$	3	90	ARCHAMBAU...	09	PICA	F	
$<$	6	90	LEBEDENKO	09A	ZEP3	Xe	
$<$	9	90	ANGLE	08A	XE10	Xe	
$<$	100	90	ALNER	07	ZEP2	Xe	
$<$	0.8	90	LEE	07A	KIMS	CsI	
$<$	4×10^{4}	90	[20] MIUCHI	07	NAGE	F (CF_4)	
$<$	30	90	[23] AKERIB	06	CDMS	^{73}Ge, ^{29}Si	
$<$	1.5	90	ALNER	05	NAIA	NaI	
$<$	15	90	BARNABE-HE...	05	PICA	F (C_4F_{10})	
$<$	600	90	BENOIT	05	EDEL	^{73}Ge	
$<$	10	90	GIRARD	05	SMPL	F (C_2ClF_5)	
$<$	260	90	MIUCHI	03	BOLO	LiF	
$<$	150	90	TAKEDA	03	BOLO	NaF	

[1] AALBERS 23 yield first SD LZ limits on WIMP-p scatter using Xe. $\sigma^{SD}(\chi p) < 2 \times 10^{-3}$ pb for m(χ) = 1 TeV. NODE=S030DP3;LINKAGE=Q

[2] ADHIKARI 23C search for SD WIMP scatter on I. No signal observed. Require $\sigma^{SD}(\chi p) < 0.2$ pb for m(χ) = 1 TeV. NODE=S030DP3;LINKAGE=R

[3] HUANG 22 search for SD DM scatter on Xe; no signal observed; limits placed in $\sigma(\chi n)$ vs. m(DM) plane; quoted limit is for m(DM) = 1 TeV. NODE=S030DP3;LINKAGE=P

[4] IKEDA 21 use direction sensitive TPC NEWAGE to search for SD WIMPs. No signal observed. Limits set in $\sigma^{SD}(\chi p)$ vs. m plane; $\sigma^{SD}(\chi p) < 200$ pb for m(DM) = 1000 GeV. NODE=S030DP3;LINKAGE=O

[5] AARTSEN 20C place combined IceCube and Pico-60 velocity-independent limits on spin-dependent WIMP-p scatter $\sigma^{SD}(\chi p) < 3 \times 10^{-3}$ pb for m(WIMP) = 1 TeV assuming dominant annihilation to WW. NODE=S030DP3;LINKAGE=N

[6] AMOLE 19 search for SD WIMP scatter on C_3F_8 in PICO-60 bubble chamber; no signal: set limit for spin dependent coupling $\sigma^{SD}(\chi p) < 3 \times 10^{-4}$ pb for m(χ) = 1000 GeV. NODE=S030DP3;LINKAGE=J

[7] APRILE 19A search for SD WIMP scatter on 1 t yr Xe; no signal, limits placed in $\sigma^{SD}(\chi p)$ vs. m(χ) plane for m $\sim$ 6–1000 GeV. NODE=S030DP3;LINKAGE=K

[8] XIA 19A search for WIMP scatter on Xe in PandaX-II; limits placed in $\sigma^{SD}(\chi p)$ vs. m(χ) plane for m(χ) $\sim$ 5–1 $\times 10^5$ GeV. NODE=S030DP3;LINKAGE=M

[9] ALBERT 18C search for DM annihilation in Sun to long-lived mediator (LLM) which decays outside Sun, for DM masses above 1 TeV; assuming LLM, limits set on $\sigma^{SD}(\chi p)$. NODE=S030DP3;LINKAGE=H

[10] AARTSEN 17A search for neutrinos from solar WIMP annihilation into $\tau^+\tau^-$ in 532 days of live time. NODE=S030DP3;LINKAGE=G

[11] AKERIB 17A search for SD WIMP scatter on Xe using 129.5 kg yr exposure; limits placed in $\sigma^{SD}(\chi p)$ vs. m(χ) plane for m(χ) $\sim$ 6–1 $\times 10^5$ GeV. NODE=S030DP3;LINKAGE=I

[12] FU 17 search for SD WIMP scatter on Xe; limits set in $\sigma^{SD}(\chi p)$ vs. m(χ) plane for m(χ) $\sim$ 4–1 $\times 10^3$ GeV. NODE=S030DP3;LINKAGE=L

[13] ADRIAN-MARTINEZ 16B search for secluded DM via WIMP annihilation in solar core into light mediator which later decays to μ or νs; limits presented in Figures 3 and 4. NODE=S030DP3;LINKAGE=F

[14] AVRORIN 14 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the Sun in data taken between 1998 and 2003. See their Table 1 for limits assuming annihilation into neutrino pairs. NODE=S030DP3;LINKAGE=A0

[15] AARTSEN 13 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the sun in data taken between June 2010 and May 2011. NODE=S030DP3;LINKAGE=B

[16] ADRIAN-MARTINEZ 13 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the sun in data taken between Jan. 2007 and Dec. 2008. NODE=S030DP3;LINKAGE=C

[17] The value has been provided by the authors. APRILE 13 note that the proton limits on Xe are highly sensitive to the theoretical model used. See also APRILE 14A. NODE=S030DP3;LINKAGE=A

[18] BOLIEV 13 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the sun in data taken from 1978 to 2009. See also SUVOROVA 13 for an older analysis of the same data. NODE=S030DP3;LINKAGE=E

[19] ABBASI 12 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the Sun. The amount of X^0 depends on the X^0-proton cross section. NODE=S030DP3;LINKAGE=AI
[20] Use a direction-sensitive detector. NODE=S030DP3;LINKAGE=AH
[21] TANAKA 11 search for neutrinos from the Sun arising from the pair annihilation of X^0 trapped by the Sun. The amount of X^0 depends on the X^0-proton cross section. NODE=S030DP3;LINKAGE=TA
[22] ABBASI 10 search for ν_μ from annihilations of Kaluza-Klein photon dark matter in the Sun. NODE=S030DP3;LINKAGE=AA
[23] See also AKERIB 05. NODE=S030DP3;LINKAGE=AK

Spin-Dependent Cross Section Limits for Dark Matter Particle (X^0) on Neutron

NODE=S030DNX

For m_{X^0} in GeV range

NODE=S030DN5

We provide here limits fo m_{X^0} < 5 GeV

NODE=S030DN5
NODE=S030DN5

VALUE (pb)	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$< 1 \times 10^{10}$	90	[1] ANGLOHER	24B	CRES	low mass DM search
$< 1 \times 10^{2}$	90	[2] AALBERS	23A	LZ	SD scatter on Xe
$< 1 \times 10^{6}$	90	[3] ANGLOHER	22	CRES	SD limit using Li
<570	90	[4] ANGLOHER	22A	CRES	SD limit using Li and Al
$< 1 \times 10^{8}$	90	[5] ABDELHAME...	20A	CRES	$LiAlO_2$
$< 1 \times 10^{10}$	95	[6] ABDELHAME...	19	CRES	SD low mass DM on Li
$< 2.3 \times 10^{2}$	90	[7] APRILE	19C	XE1T	light DM on Xe via Migdal/brem effect
$< 1 \times 10^{-2}$	90	[8] APRILE	19D	XE1T	light DM on Xe via ionization
$< 4 \times 10^{4}$	90	[9] ARMENGAUD	19	EDEL	GeV-scale WIMPs on Ge
$< 8 \times 10^{-2}$	90	[10] XIA	19A	PNDX	SD WIMP on Xe
< 3	90	[11] AGNESE	18	SCDM	GeV-scale WIMPs on Ge
< 3	90	[12] JIANG	18	CDEX	GeV-scale WIMPs on Ge
< 10	90	[13] YANG	18	CDEX	WIMPs on Ge
$< 1 \times 10^{-1}$	90	[14] AKERIB	17A	LUX	Xe
< 0.1	90	[15] FU	17	PNDX	SD WIMP on Xe
< 20	90	[16] ZHAO	16	CDEX	GeV-scale WIMPs on Ge
<150	90	[17] AHMED	11B	CDM2	GeV-scale WIMPs on Ge

[1] ANGLOHER 24B search for low mass wimps. No signal observed. Limits placed in σ vs. m plane. Quoted limit for m = 100 MeV. NODE=S030DN5;LINKAGE=Q
[2] AALBERS 23A search for GeV-scale WIMP scatter on Xe. No signal observed. Limits placed in $\sigma^{SD}(\chi n)$ vs. m(χ) plane. Quoted limit is for m(χ) = 1 GeV via Migdal scattering. NODE=S030DN5;LINKAGE=P
[3] ANGLOHER 22 search for SD WIMP scatter on Li target; no signal detected; limits placed on WIMP-neutron SD scatter versus m(WIMP); limit quoted for m(WIMP) = 1 GeV. NODE=S030DN5;LINKAGE=N
[4] ANGLOHER 22A search for spin-dependent DM scatter on Li and Al for m(DM) ∼ 0.2–6 GeV; no signal observed; limits set in $\sigma(\chi n)$ vs. m(DM) plane; quoted limit is for m(DM) = 1 GeV. NODE=S030DN5;LINKAGE=O
[5] ABDELHAMEED 20A use $LiAlO_2$ target in CRESST to search for SD WIMP scatter; no signal; quoted limit is for m(DM) = 1 GeV. NODE=S030DN5;LINKAGE=M
[6] ABDELHAMEED 19 search for GeV-scale WIMP SD scatter on ^{7}Li crystal; set limit $\sigma^{SD}(\chi n)$ for m(χ) ∼ 0.8–20 GeV; quoted limit for m(χ) = 1 GeV. NODE=S030DN5;LINKAGE=C
[7] APRILE 19C search for light DM on Xe via Migdal/bremsstrahlung effect; no signal, require $\sigma^{SD}(\chi n)$ <230 pb for m(χ) = 1 GeV. NODE=S030DN5;LINKAGE=A
[8] APRILE 19D search for light DM scatter on Xe via ionization; no signal, limits placed in σ vs. m(DM) ∼ 3–6 GeV; quoted limit is for m(DM) = 5 GeV. NODE=S030DN5;LINKAGE=B
[9] ARMENGAUD 19 search for GeV scale WIMP scatter on Ge; limits placed in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m(χ) ∼ 0.5–10 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DN5;LINKAGE=G
[10] XIA 19A search for WIMP scatter on Xe in PandaX-II; limits placed in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m(χ) ∼ 5–1×10^5 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DN5;LINKAGE=J
[11] AGNESE 18 search for GeV scale WIMPs scatter at CDMSlite; limits placed in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m ∼ 1.5–20 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DN5;LINKAGE=D
[12] JIANG 18 search for GeV scale WIMP scatter on Ge; limits placed in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m(χ) ∼ 3–10 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DN5;LINKAGE=I
[13] YANG 18 search for WIMP scatter on Ge; limits placed in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m(χ) ∼ 2–10 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DN5;LINKAGE=K
[14] AKERIB 17A search for SD WIMP scatter on Xe with 129.5 kg yr exposure; limits placed in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m(χ) ∼ 5–1×10^5 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DN5;LINKAGE=F
[15] FU 17 search for SD WIMP scatter on Xe; limits set in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m(χ) ∼ 4–1×10^3 GeV.; quoted limit is for m(χ) = 5 GeV. NODE=S030DN5;LINKAGE=H
[16] ZHAO 16 search for GeV-scale WIMP scatter on Ge; limits placed in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m(χ) ∼ 4–30 GeV; quoted limit is for m(χ) = 5 GeV. NODE=S030DN5;LINKAGE=L
[17] AHMED 11B search for GeV scale WIMP scatter on Ge in CDMS II; limits placed in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m ∼ 4–12 GeV. Limit given for m(χ) = 5 GeV. NODE=S030DN5;LINKAGE=E

For m_{χ^0} = 20 GeV

NODE=S030DN1
NODE=S030DN1

VALUE (pb)	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$< 2 \times 10^{-6}$	90	[1] AALBERS	23	LZ	SD scatter on Xe
$< 5 \times 10^{6}$	90	[2] ANGLOHER	22	CRES	SD limit using Li
$< 7 \times 10^{-6}$	90	[3] HUANG	22	PNDX	SD DM limits
$< 5 \times 10^{7}$	90	[4] ABDELHAME...	20A	CRES	$LiAlO_2$
$< 1 \times 10^{-1}$		[5] FELIZARDO	20	SMPL	WIMPs via SIMPLE
$< 8 \times 10^{-6}$	90	[6] APRILE	19A	XE1T	Xe, SD
$< 3 \times 10^{-5}$	90	[7] XIA	19A	PNDX	SD WIMP on Xe
< 1.5	95	[8] AGNESE	18	SCDM	Ge
$< 2.5 \times 10^{-5}$	90	[9] AKERIB	17A	LUX	Xe
$< 7 \times 10^{-5}$	90	[10] FU	17	PNDX	SD WIMP on Xe
< 2	90	[11] ZHAO	16	CDEX	GeV-scale WIMPs on Ge
< 0.09	90	FELIZARDO	14	SMPL	C_2ClF_5
< 8	90	[12] UCHIDA	14	XMAS	^{129}Xe, inelastic
$< 1.13 \times 10^{-3}$	90	[13] APRILE	13	X100	Xe
< 0.02	90	AKIMOV	12	ZEP3	Xe
< 0.06	90	AHMED	09	CDM2	Ge
< 0.04	90	LEBEDENKO	09A	ZEP3	Xe
< 50		[14] LIN	09	TEXO	Ge
$< 6 \times 10^{-3}$	90	ANGLE	08A	XE10	Xe
< 0.5	90	ALNER	07	ZEP2	Xe
< 25	90	LEE	07A	KIMS	CsI
< 0.3	90	[15] AKERIB	06	CDMS	^{73}Ge, ^{29}Si
< 30	90	SHIMIZU	06A	CNTR	F (CaF_2)
< 60	90	ALNER	05	NAIA	NaI
< 20	90	BARNABE-HE...	05	PICA	F (C_4F_{10})
< 10	90	BENOIT	05	EDEL	^{73}Ge
< 4	90	KLAPDOR-K...	05	HDMS	^{73}Ge (enriched)
<600	90	TAKEDA	03	BOLO	NaF

[1] AALBERS 23 yield first LZ limits on SD WIMP-n scatter using Xe. $\sigma^{SD}(\chi n) < 2\times10^{-6}$ pb for m(χ) = 20 GeV. NODE=S030DN1;LINKAGE=N

[2] ANGLOHER 22 search for SD WIMP-neutron scatter from Li target; no signal detected; limits placed in σ vs. m(WIMP) plane. NODE=S030DN1;LINKAGE=L

[3] HUANG 22 search for SD DM scatter on Xe; no signal observed; limits placed in $\sigma(\chi n)$ vs. m(DM) plane; quoted limit is for m(DM) = 20 GeV. NODE=S030DN1;LINKAGE=M

[4] ABDELHAMEED 20A use $LiAlO_2$ target in CRESST to search for SD WIMP scatter on n; limits placed for m(WIMP): 0.3–30 GeV in Fig. 8. Quoted limit is for M(WIMP) = 30 GeV. NODE=S030DN1;LINKAGE=K

[5] FELIZARDO 20 presents 2014 SIMPLE bounds on WIMP DM using C_2ClF_5 target. NODE=S030DN1;LINKAGE=J

[6] APRILE 19A search for SD WIMP scatter on 1 t yr Xe; no signal: limits placed in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m $\sim$ 6–1000 GeV. NODE=S030DN1;LINKAGE=E

[7] XIA 19A search for WIMP scatter on Xe in PandaX-II; limits placed in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m(χ) $\sim$ 5–1×10^5 GeV. NODE=S030DN1;LINKAGE=H

[8] AGNESE 18 give limits for $\sigma^{SD}(n\chi)$ for m(WIMP) between 1.5 and 20 GeV using CDMSlite mode data. NODE=S030DN1;LINKAGE=B

[9] AKERIB 17A search for SD WIMP scatter on Xe with 129.5 kg yr exposure; limits placed in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m(χ) $\sim$ 5–1×10^5 GeV. NODE=S030DN1;LINKAGE=F

[10] FU 17 search for SD WIMP scatter on Xe; limits set in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m(χ) $\sim$ 4–1×10^3 GeV. NODE=S030DN1;LINKAGE=G

[11] ZHAO 16 search for GeV-scale WIMP scatter on Ge; limits placed in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m(χ) $\sim$ 4–30 GeV. NODE=S030DN1;LINKAGE=I

[12] Derived limit from search for inelastic scattering $X^0 + {}^{129}\text{Xe} \to X^0 + {}^{129}\text{Xe}^*$(39.58 keV). NODE=S030DN1;LINKAGE=A

[13] The value has been provided by the authors. See also APRILE 14A. NODE=S030DN1;LINKAGE=AP

[14] See their Fig. 6(b) for cross section limits for m_{X^0} extending down to 2 GeV. NODE=S030DN1;LINKAGE=LI

[15] See also AKERIB 05. NODE=S030DN1;LINKAGE=AK

For m_{χ^0} = 100 GeV

NODE=S030DN2
NODE=S030DN2

VALUE (pb)	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$< 5 \times 10^{-6}$	90	[1] AALBERS	23	LZ	SD scatter on Xe
$< 1 \times 10^{-5}$	90	[2] HUANG	22	PNDX	SD DM limits
$< 1.5 \times 10^{-1}$		[3] FELIZARDO	20	SMPL	WIMPs via SIMPLE
$< 1.5 \times 10^{-5}$	90	[4] APRILE	19A	XE1T	Xe, SD
$< 4 \times 10^{-3}$	90	[5] SUZUKI	19	XMAS	^{129}Xe, inelastic
$< 2 \times 10^{-5}$	90	[6] XIA	19A	PNDX	SD WIMP on Xe
$< 2.5 \times 10^{-5}$	90	[7] AKERIB	17A	LUX	Xe

$< 7 \times 10^{-5}$	90	[8] FU	17	PNDX	SD WIMP on Xe
< 0.1	90	FELIZARDO	14	SMPL	C_2ClF_5
< 0.05	90	[9] UCHIDA	14	XMAS	^{129}Xe, inelastic
$< 4.68 \times 10^{-4}$	90	[10] APRILE	13	X100	Xe
< 0.01	90	AKIMOV	12	ZEP3	Xe
		[11] FELIZARDO	10	SMPL	C_2ClF_3
< 0.02	90	AHMED	09	CDM2	Ge
< 0.01	90	LEBEDENKO	09A	ZEP3	Xe
<100	90	LIN	09	TEXO	Ge
< 0.01	90	ANGLE	08A	XE10	Xe
< 0.05	90	[12] BEDNYAKOV	08	RVUE	Ge
< 0.08	90	ALNER	07	ZEP2	Xe
< 6	90	LEE	07A	KIMS	CsI
< 0.07	90	[13] AKERIB	06	CDMS	^{73}Ge, ^{29}Si
< 30	90	SHIMIZU	06A	CNTR	F (CaF_2)
< 10	90	ALNER	05	NAIA	NaI
< 30	90	BARNABE-HE...	05	PICA	F (C_4F_{10})
< 0.7	90	BENOIT	05	EDEL	^{73}Ge
< 0.2		[14] GIULIANI	05A	RVUE	
< 1.5	90	KLAPDOR-K...	05	HDMS	^{73}Ge (enriched)
		[15] GIULIANI	04	RVUE	
		[16] GIULIANI	04A	RVUE	
		[17] MIUCHI	03	BOLO	LiF
<800	90	TAKEDA	03	BOLO	NaF

[1] AALBERS 23 yield first LZ limits on SD WIMP-n scatter using Xe. $\sigma(\chi n) < 5 \times 10^{-6}$ pb for m(χ) = 100 GeV. NODE=S030DN2;LINKAGE=I

[2] HUANG 22 search for SD DM scatter on Xe; no signal observed; limits placed in $\sigma(\chi n)$ vs. m(DM) plane; quoted limit is for m(DM) = 100 GeV. NODE=S030DN2;LINKAGE=H

[3] FELIZARDO 20 presents 2014 SIMPLE bounds on WIMP DM using C_2ClF_5 target. NODE=S030DN2;LINKAGE=G

[4] APRILE 19A search for SD WIMP scatter on 1 t yr Xe; no signal, limits placed in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m $\sim$ 6–1000 GeV. NODE=S030DN2;LINKAGE=D

[5] SUZUKI 19 search in single phase liquid xenon detector for inelastic scattering $X^0 + {}^{129}\text{Xe} \rightarrow X^0 + {}^{129}\text{Xe}^*$ (39.58 keV) ; no signal: require $\sigma(\chi n)^{SD} < 4 \times 10^{-3}$ pb for m(χ) = 100 GeV. NODE=S030DN2;LINKAGE=C

[6] XIA 19A search for WIMP scatter on Xe in PandaX-II; limits placed in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m(χ) $\sim$ 5–1 $\times 10^5$ GeV. NODE=S030DN2;LINKAGE=F

[7] AKERIB 17A search for SD WIMP scatter on Xe with 129.5 kg yr exposure; limits placed in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m(χ) $\sim$ 5–1 $\times 10^5$ GeV. NODE=S030DN2;LINKAGE=B

[8] FU 17 search for SD WIMP scatter on Xe; limits set in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m(χ) $\sim$ 4–1 $\times 10^3$ GeV. NODE=S030DN2;LINKAGE=E

[9] UCHIDA 14 derived limit from search for inelastic scattering $X^0 + {}^{129}\text{Xe} \rightarrow X^0 + {}^{129}\text{Xe}$(39.58 keV). NODE=S030DN2;LINKAGE=A

[10] The value has been provided by the authors. See also APRILE 14A. NODE=S030DN2;LINKAGE=AP

[11] See their Fig. 3 for limits on spin-dependent neutron couplings for X^0 mass of 50 GeV. NODE=S030DN2;LINKAGE=FE

[12] BEDNYAKOV 08 reanalyze KLAPDOR-KLEINGROTHAUS 05 and BAUDIS 01 data. NODE=S030DN2;LINKAGE=BD

[13] See also AKERIB 05. NODE=S030DN2;LINKAGE=AK

[14] GIULIANI 05A analyze available data and give combined limits. NODE=S030DN2;LINKAGE=GN

[15] GIULIANI 04 reanalyze COLLAR 00 data and give limits for spin-dependent X^0-neutron coupling. NODE=S030DN2;LINKAGE=GI

[16] GIULIANI 04A give limits for spin-dependent X^0-neutron couplings from existing data. NODE=S030DN2;LINKAGE=GU

[17] MIUCHI 03 give model-independent limit for spin-dependent X^0-proton and neutron cross sections. See their Fig. 5. NODE=S030DN2;LINKAGE=MI

For m_{X^0} = 1 TeV

NODE=S030DN3
NODE=S030DN3

VALUE (pb)	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$< 5 \times 10^{-5}$	90	[1] AALBERS	23	LZ	SD scatter on Xe
$< 6 \times 10^{-5}$	90	[2] HUANG	22	PNDX	SD DM limits
$< 7 \times 10^{-1}$		[3] FELIZARDO	20	SMPL	WIMPs via SIMPLE
$< 1.2 \times 10^{-4}$	90	[4] APRILE	19A	XE1T	Xe, SD
$< 2 \times 10^{-4}$	90	[5] XIA	19A	PNDX	Xe
$< 2.5 \times 10^{-4}$	90	[6] AKERIB	17A	LUX	Xe
$< 4 \times 10^{-4}$	90	[7] FU	17	PNDX	SD WIMP on Xe
< 0.07	90	FELIZARDO	14	SMPL	C_2ClF_5
< 0.2	90	[8] UCHIDA	14	XMAS	^{129}Xe, inelastic
$< 3.64 \times 10^{-3}$	90	[9] APRILE	13	X100	Xe
< 0.08	90	AKIMOV	12	ZEP3	Xe
< 0.2	90	AHMED	09	CDM2	Ge

<0.1	90	LEBEDENKO	09A	ZEP3 Xe
<0.1	90	ANGLE	08A	XE10 Xe
<0.25	90	[10] BEDNYAKOV	08	RVUE Ge
<0.6	90	ALNER	07	ZEP2 Xe
<30	90	LEE	07A	KIMS CsI
<0.5	90	[11] AKERIB	06	CDMS ^{73}Ge, ^{29}Si
<40	90	ALNER	05	NAIA NaI
<200	90	BARNABE-HE...	05	PICA F (C_4F_{10})
<4	90	BENOIT	05	EDEL ^{73}Ge
<10	90	KLAPDOR-K...	05	HDMS ^{73}Ge (enriched)
$<4 \times 10^3$	90	TAKEDA	03	BOLO NaF

[1] AALBERS 23 yield first LZ SD limits on WIMP-n scatter on Xe. $\sigma^{SD}(\chi n) < 5 \times 10^{-5}$ pb for m(χ) = 1 TeV. NODE=S030DN3;LINKAGE=H

[2] HUANG 22 search for SD DM scatter on Xe; no signal observed; limits placed in $\sigma(\chi n)$ vs. m(DM) plane; quoted limit is for m(DM) = 1 TeV. NODE=S030DN3;LINKAGE=G

[3] FELIZARDO 20 presents 2014 SIMPLE bounds on WIMP DM using C_2ClF_5 target. NODE=S030DN3;LINKAGE=F

[4] APRILE 19A search for SD WIMP scatter on 1 t yr Xe; no signal, limits placed in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m $\sim$ 6–1000 GeV. NODE=S030DN3;LINKAGE=D

[5] XIA 19A search for WIMP scatter on Xe in PandaX-II; limits placed in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m(χ) $\sim$ 5–1 $\times 10^5$ GeV. NODE=S030DN3;LINKAGE=B

[6] AKERIB 17A search for SD WIMP scatter on Xe with 129.5 kg yr exposure; limits placed in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m(χ) $\sim$ 5–1 $\times 10^5$ GeV. NODE=S030DN3;LINKAGE=C

[7] FU 17 search for SD WIMP scatter on Xe; limits set in $\sigma^{SD}(\chi n)$ vs. m(χ) plane for m(χ) $\sim$ 4–1 $\times 10^3$ GeV. NODE=S030DN3;LINKAGE=E

[8] Derived limit from search for inelastic scattering $X^0 + {}^{129}\text{Xe}^* \rightarrow X^0 + {}^{129}\text{Xe}^*$(39.58 keV). NODE=S030DN3;LINKAGE=A

[9] The value has been provided by the authors. See also APRILE 14A. NODE=S030DN3;LINKAGE=AP

[10] BEDNYAKOV 08 reanalyze KLAPDOR-KLEINGROTHAUS 05 and BAUDIS 01 data. NODE=S030DN3;LINKAGE=BD

[11] See also AKERIB 05. NODE=S030DN3;LINKAGE=AK

Cross-Section Limits for Dark Matter Particles (X^0) on electron

NODE=S030DEX

For m_{X^0} in GeV range

NODE=S030DE5

We provide here limits fo m_{X^0} $<$ 5 GeV

NODE=S030DE5

NODE=S030DE5

VALUE (pb)	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
		[1] SHANG	24	PNDX	boosted keV-scale DM
		[2] ZHANG	24A	CDEX	accelerated DM scatter on e in semiconductor
$<3 \times 10^{-3}$	90	[3] AGNES	23A	DS50	LDM scatter on e
<0.3	90	[4] ARNQUIST	23A	DAMC	LDM search via CCDs
$<2 \times 10^{-5}$	90	[5] LI	23F	PNDX	light DM limits
		[6] AGOSTINI	22A	GERD	search for superWIMPs
<1000	90	[7] APRILE	22	XE1T	WIMP-e scatter
		[8] BATTAGLIERI	22		BDX-MINI search for light DM from beam dump
$<2 \times 10^{-9}$	95	[9] BOSE	22		DM-e limits from solar γs
<100		[10] GHOSH	22		boosted DM-e/DM-ν scatter
		[11] HOCHBERG	22	SNSP	superconducting nanowire search for light DM
		[12] ZHANG	22A	CDEX	light DM search on e in Ge
<10	90	[13] CHENG	21	PNDX	MeV-scale DM on e
		[14] AKERIB	20	LUX	mirror DM with Xe
$<8.7 \times 10^2$	90	[15] AMARAL	20	SCDM	light DM scatter on e in Si
		[16] APRILE	20	XE1T	excess keV electron recoil in Xe
<100	90	[17] ARNAUD	20	EDEL	MeV DM scatter on e in Ge
<0.6	90	[18] BARAK	20	SENS	MeV scale DM scatter from e in Si
$<2 \times 10^6$	90	[19] ABRAMOFF	19	SENS	WIMP-e scatter on Si
		[20] AGUILAR-AR...	19A	DMIC	MeV scale DM scatter on e in Si
$<1 \times 10^{-4}$	90	[21] APRILE	19D	XE1T	light DM on Xe via ionization
$<9 \times 10^{-3}$	90	[22] AGNES	18B	DS50	Ar
$<1 \times 10^4$	90	[23] AGNESE	18B	SCDM	$e\chi$ scatter
$<5 \times 10^3$	90	[24] CRISLER	18	SENS	Si CCD
		[25] APRILE	17	X100	Xe, annual modulation

OCCUR=2

[1] SHANG 24 report on search for electron cosmic-ray boosted DM in keV range or below with PandaX-4T. No signal observed. Limits plotted in $\sigma(\chi e)$ vs m plane for m $\sim$ 10^{-2}–10^{3} keV. NODE=S030DE5;LINKAGE=AA

[2] ZHANG 24A examine detection of accelerated MeV-scale DM on e in Ge semiconductor. Limits placed in σ_e vs. m plane depending on various mediator assumptions. NODE=S030DE5;LINKAGE=Z

[3] AGNES 23A search for MeV-scale DM scatter from e using Ar. No signal observed. $\sigma(\chi e) < 3 \times 10^{-3}$ pb for m(χ) = 30 MeV. NODE=S030DE5;LINKAGE=W

[4] ARNQUIST 23A search for LDM scatter on e using CCDs. No signal observed. Require $\sigma(\chi e) < 0.3$ pb for m(χ) = 10 MeV and $F_{DM} = 1$ (Fig. 3b). NODE=S030DE5;LINKAGE=X

[5] LI 23F search for light DM in MeV range via scatter from e. No signal observed. Limits set. The quoted limit is for m(χ) = 0.2 GeV with $F_{DM} = 1$. NODE=S030DE5;LINKAGE=Y

[6] AGOSTINI 22 search for superWIMP particles using GERDA detector; no signal observed; limits placed in mass vs coupling plane for m(DM) 0.06–1 MeV. NODE=S030DE5;LINKAGE=S

[7] APRILE 22 place new limits on WIMP-e scatter for dark photon and various multipole moments vs. WIMP mass for various DM models; quoted limit for m(WIMP) = 1 GeV in light mediator model. NODE=S030DE5;LINKAGE=P

[8] BATTAGLIERI 22 search for light MeV scale DM particles produced in JLAB beam dump; no signal observed; limits set in kinetic mixing vs. m(DM) plane for m(DM) $\sim$ 1–200 MeV . NODE=S030DE5;LINKAGE=T

[9] BOSE 22 theoretically derive limits on WIMP-e scatter from solar gamma rays using data of Fermi-LAT; limit quoted for m(WIMP) = 5 GeV. NODE=S030DE5;LINKAGE=Q

[10] GHOSH 22 derive limits on sub-GeV boosted DM scatter from e or ν using SuperK/XENON1T data; quoted limit for m(χ) = 1 MeV. NODE=S030DE5;LINKAGE=R

[11] HOCHBERG 22 search for sub-eV or sub-MeV scale DM scatter/absorption on e in superconducting nanowire; no signal observed; limits set in m(DM) vs. cross section plane for sub-MeV-scale DM and in m(DM) vs. kinetic mixing plane for sub-eV-scale DM. NODE=S030DE5;LINKAGE=U

[12] ZHANG 22A search for DM scatter on e using CDEX-10; no signal observed; limits placed on $\sigma(\chi e)$ vs. m(DM) plane for m(DM) $\sim$ 0.07–10 GeV for various simplified models. NODE=S030DE5;LINKAGE=V

[13] CHENG 21 search for MeV-scale DM scatter from e in PANDAX-II. No signal detected. Limits set in $\sigma(\chi e)$ vs. m(DM) plane for two choices of form factors; $\sigma(\chi e) < 10$ pb for m(χ) = 10 MeV and $F_{DM} = 1$. NODE=S030DE5;LINKAGE=O

[14] AKERIB 20 search for mirror DM with LUX 95 d $\times$ 118 kg data for mirror e scatter from Xe; no signal, limits placed in kinetic mixing parameter vs. mirror e temperature T $\sim$ 0.1–0.9 keV plane. NODE=S030DE5;LINKAGE=B

[15] AMARAL 20 search SuperCDMS data for low mass DM scatter from e in Si; no signal; quoted limit $\sigma_e < 8.7 \times 10^{2}$ pb for m(DM) = 10 MeV with form factor $F_{DM} = 1$. NODE=S030DE5;LINKAGE=K

[16] APRILE 20 report excess at electron recoil around 2–3 keV in Xe; data compared to unforeseen tritium background, and various signal models (bosonic DM, solar axion, and neutrino magnetic moment). NODE=S030DE5;LINKAGE=L

[17] ARNAUD 20 search for MeV DM scattering from e in Ge; no signal; quoted limit is for m(DM) = 10 MeV with form factor $F_{DM} = 1$. NODE=S030DE5;LINKAGE=M

[18] BARAK 20 report search for MeV scale DM scatter from e in Si; limits placed in σ_e vs. m(DM) plane; quoted limit is for m(DM) = 10 MeV and form factor $F_{DM} = 1$. NODE=S030DE5;LINKAGE=N

[19] ABRAMOFF 19 search for MeV-scale WIMP scatter from Si skipper-CCD; limits placed on $\sigma(\chi e)$ for m(χ) $\sim$ 0.5–100 MeV depending on DM form factors. Limit given for m(DM) = 1 MeV. NODE=S030DE5;LINKAGE=E

[20] AGUILAR-AREVALO 19A search for MeV scale DM scatter from e in Si CCDs at SNOLAB; no signal, limits placed in σ(e) vs. m(DM) plane for m(DM) $\sim$ 0.6–100 MeV. NODE=S030DE5;LINKAGE=A

[21] APRILE 19D search for light DM scatter on Xe via ionization; no signal, limits placed in σ on nucleus vs. m(DM) plane for m(DM) $\sim$ 0.02–10 GeV; quoted limit is for m(DM) = 0.2 GeV. NODE=S030DE5;LINKAGE=D

[22] AGNES 18B search for MeV scale WIMP scatter from e in Ar; no signal, limits set in σ_e vs. m(χ) plane for m $\sim$ 20–1000 MeV and two choices of form factor F(DM); quoted limit for m(χ) = 100 MeV and F = 1. NODE=S030DE5;LINKAGE=F

[23] AGNESE 18B search for $e\chi$ scatter in SuperCDMS; limits placed in $\sigma(e\chi)$ vs. m(χ) plane for m $\sim$ 0.3–1 $\times 10^{4}$ MeV for two assumed form factors and also in m(dark photon) vs. kinetic mixing plane. Limit given for m(χ) = 1 GeV and F=1. NODE=S030DE5;LINKAGE=G

[24] CRISLER 18 search for $\chi e \rightarrow \chi e$ scatter in Si CCD; place limits on MeV DM in σ_e vs. m(χ) plane for m $\sim$ 0.5–1000 MeV for different form factors; quoted limit is for F(DM) = 1 and m(χ) = 10 MeV. NODE=S030DE5;LINKAGE=J

[25] APRILE 17 search for WIMP-e annual modulation signal for recoil energy in the 2.0–5.8 keV interval using 4 years data with Xe. No significant effect seen. NODE=S030DE5;LINKAGE=I

Cross-Section Limits for Dark Matter Particles (X^0) on Nuclei

NODE=S030510

For m_{X^0} in GeV range

NODE=S030DM5

We provide here limits fo $m_{X^0} < 5$ GeV

NODE=S030DM5
NODE=S030DM5

VALUE (pb)	*DOCUMENT ID*		*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •			
	[1] AKIMOV	22	COHERENT search for DM mediators

[1] AKIMOV 22 use COHERENT CsI(Na) detector to search for sub GeV DM particles produced by the Spallation Neutron Source; no signal observed; limits placed in mediator mass vs. coupling plane for leptophobic DM models. NODE=S030DM5;LINKAGE=A

For m_{X^0} = 20 GeV

NODE=S030DM1
NODE=S030DM1

VALUE (nb)	CL%	DOCUMENT ID		TECN	COMMENT	
• • • We do not use the following data for averages, fits, limits, etc. • • •						
$<$ 0.03	90	[1] UCHIDA	14	XMAS	^{129}Xe, inelastic	
$<$ 0.08	90	[2] ANGLOHER	02	CRES	Al	
		[3] BENOIT	00	EDEL	Ge	
$<$ 0.04	95	[4] KLIMENKO	98	CNTR	^{73}Ge, inel.	
$<$ 0.8		ALESSAND...	96	CNTR	O	
$<$ 6		ALESSAND...	96	CNTR	Te	OCCUR=2
$<$ 0.02	90	[5] BELLI	96	CNTR	^{129}Xe, inel.	
		[6] BELLI	96C	CNTR	^{129}Xe	
$< 4 \times 10^{-3}$	90	[7] BERNABEI	96	CNTR	Na	OCCUR=2
$<$ 0.3	90	[7] BERNABEI	96	CNTR	I	OCCUR=3
$<$ 0.2	95	[8] SARSA	96	CNTR	Na	
$<$ 0.015	90	[9] SMITH	96	CNTR	Na	
$<$ 0.05	95	[10] GARCIA	95	CNTR	Natural Ge	
$<$ 0.1	95	QUENBY	95	CNTR	Na	
$<$90	90	[11] SNOWDEN-...	95	MICA	^{16}O	
$< 4 \times 10^{3}$	90	[11] SNOWDEN-...	95	MICA	^{39}K	OCCUR=2
$<$ 0.7	90	BACCI	92	CNTR	Na	
$<$ 0.12	90	[12] REUSSER	91	CNTR	Natural Ge	
$<$ 0.06	95	CALDWELL	88	CNTR	Natural Ge	

[1] UCHIDA 14 limit is for inelastic scattering $X^0 + {}^{129}\mathrm{Xe}^* \rightarrow X^0 + {}^{129}\mathrm{Xe}^*$ (39.58 keV). NODE=S030DM1;LINKAGE=C

[2] ANGLOHER 02 limit is for spin-dependent WIMP-Aluminum cross section. NODE=S030DM1;LINKAGE=AL

[3] BENOIT 00 find four event categories in Ge detectors and suggest that low-energy surface nuclear recoils can explain anomalous events reported by UKDMC and Saclay NaI experiments. NODE=S030DM1;LINKAGE=BN

[4] KLIMENKO 98 limit is for inelastic scattering $X^0\, {}^{73}\mathrm{Ge} \rightarrow X^0\, {}^{73}\mathrm{Ge}^*$ (13.26 keV). NODE=S030DM1;LINKAGE=KA

[5] BELLI 96 limit for inelastic scattering $X^0\, {}^{129}\mathrm{Xe} \rightarrow X^0\, {}^{129}\mathrm{Xe}^*$(39.58 keV). NODE=S030DM1;LINKAGE=E

[6] BELLI 96C use background subtraction and obtain $\sigma <$ 150 pb ($<$ 1.5 fb) (90% CL) for spin-dependent (independent) X^0-proton cross section. The confidence level is from R. Bernabei, private communication, May 20, 1999. NODE=S030DM1;LINKAGE=BC

[7] BERNABEI 96 use pulse shape discrimination to enhance the possible signal. The limit here is from R. Bernabei, private communication, September 19, 1997. NODE=S030DM1;LINKAGE=B6

[8] SARSA 96 search for annual modulation of WIMP signal. See SARSA 97 for details of the analysis. The limit here is from M.L. Sarsa, private communication, May 26, 1997. NODE=S030DM1;LINKAGE=G

[9] SMITH 96 use pulse shape discrimination to enhance the possible signal. A dark matter density of 0.4 GeV cm^{-3} is assumed. NODE=S030DM1;LINKAGE=D

[10] GARCIA 95 limit is from the event rate. A weaker limit is obtained from searches for diurnal and annual modulation. NODE=S030DM1;LINKAGE=A

[11] SNOWDEN-IFFT 95 look for recoil tracks in an ancient mica crystal. Similar limits are also given for ^{27}Al and ^{28}Si. See COLLAR 96 and SNOWDEN-IFFT 96 for discussion on potential backgrounds. NODE=S030DM1;LINKAGE=B

[12] REUSSER 91 limit here is changed from published (0.04) after reanalysis by authors. J.L. Vuilleumier, private communication, March 29, 1996. NODE=S030DM1;LINKAGE=RS

For m_{X^0} = 100 GeV

NODE=S030DM2
NODE=S030DM2

VALUE (nb)	CL%	DOCUMENT ID		TECN	COMMENT	
• • • We do not use the following data for averages, fits, limits, etc. • • •						
$< 3.3 \times 10^{-6}$	90	[1] APRILE	21A	XE1T	^{129}Xe, inelastic	
$< 3 \times 10^{-3}$	90	[2] UCHIDA	14	XMAS	^{129}Xe, inelastic	
$<$ 0.3	90	[3] ANGLOHER	02	CRES	Al	
		[4] BELLI	02	RVUE		
		[5] BERNABEI	02C	DAMA		
		[6] GREEN	02	RVUE		
		[7] ULLIO	01	RVUE		
		[8] BENOIT	00	EDEL	Ge	
$< 4 \times 10^{-3}$	90	[9] BERNABEI	00D		^{129}Xe, inelastic	
		[10] AMBROSIO	99	MCRO		
		[11] BRHLIK	99	RVUE		
$< 8 \times 10^{-3}$	95	[12] KLIMENKO	98	CNTR	^{73}Ge, inelastic	
$<$ 0.08	95	[13] KLIMENKO	98	CNTR	^{73}Ge, inelastic	OCCUR=2
$<$ 4		ALESSAND...	96	CNTR	O	
$<$25		ALESSAND...	96	CNTR	Te	OCCUR=2
$< 6 \times 10^{-3}$	90	[14] BELLI	96	CNTR	^{129}Xe, inelastic	
		[15] BELLI	96C	CNTR	^{129}Xe	
$< 1 \times 10^{-3}$	90	[16] BERNABEI	96	CNTR	Na	OCCUR=2

< 0.3	90	[16] BERNABEI	96	CNTR	I	OCCUR=3
< 0.7	95	[17] SARSA	96	CNTR	Na	
< 0.03	90	[18] SMITH	96	CNTR	Na	
< 0.8	90	[18] SMITH	96	CNTR	I	OCCUR=2
< 0.35	95	[19] GARCIA	95	CNTR	Natural Ge	
< 0.6	95	QUENBY	95	CNTR	Na	
< 3	95	QUENBY	95	CNTR	I	OCCUR=2
$< 1.5 \times 10^2$	90	[20] SNOWDEN-...	95	MICA	^{16}O	
$< 4 \times 10^2$	90	[20] SNOWDEN-...	95	MICA	^{39}K	OCCUR=2
< 0.08	90	[21] BECK	94	CNTR	^{76}Ge	
< 2.5	90	BACCI	92	CNTR	Na	
< 3	90	BACCI	92	CNTR	I	OCCUR=2
< 0.9	90	[22] REUSSER	91	CNTR	Natural Ge	
< 0.7	95	CALDWELL	88	CNTR	Natural Ge	

[1] APRILE 21A search for inelastic DM scatter off ^{129}Xe nuclei with 0.83 t yr exposure. No signal obseved. Limits placed in $\sigma(\chi\mathrm{Xe})$ vs. m(DM) plane for WIMP mass between 20 GeV and 10 TeV. NODE=S030DM2;LINKAGE=I

[2] UCHIDA 14 limit is for inelastic scattering $X^0 + {}^{129}\mathrm{Xe}^* \rightarrow X^0 + {}^{129}\mathrm{Xe}^*$(39.58 keV). NODE=S030DM2;LINKAGE=F

[3] ANGLOHER 02 limit is for spin-dependent WIMP-Aluminum cross section. NODE=S030DM2;LINKAGE=AL

[4] BELLI 02 discuss dependence of the extracted WIMP cross section on the assumptions of the galactic halo structure. NODE=S030DM2;LINKAGE=LB

[5] BERNABEI 02C analyze the DAMA data in the scenario in which X^0 scatters into a slightly heavier state as discussed by SMITH 01. NODE=S030DM2;LINKAGE=CC

[6] GREEN 02 discusses dependence of extracted WIMP cross section limits on the assumptions of the galactic halo structure. NODE=S030DM2;LINKAGE=GA

[7] ULLIO 01 disfavor the possibility that the BERNABEI 99 signal is due to spin-dependent WIMP coupling. NODE=S030DM2;LINKAGE=UL

[8] BENOIT 00 find four event categories in Ge detectors and suggest that low-energy surface nuclear recoils can explain anomalous events reported by UKDMC and Saclay NaI experiments. NODE=S030DM2;LINKAGE=BN

[9] BERNABEI 00D limit is for inelastic scattering $X^0\,{}^{129}\mathrm{Xe} \rightarrow X^0\,{}^{129}\mathrm{Xe}$ (39.58 keV). NODE=S030DM2;LINKAGE=MD

[10] AMBROSIO 99 search for upgoing muon events induced by neutrinos originating from WIMP annihilations in the Sun and Earth. NODE=S030DM2;LINKAGE=SI

[11] BRHLIK 99 discuss the effect of astrophysical uncertainties on the WIMP interpretation of the BERNABEI 99 signal. NODE=S030DM2;LINKAGE=BR

[12] KLIMENKO 98 limit is for inelastic scattering $X^0\,{}^{73}\mathrm{Ge} \rightarrow X^0\,{}^{73}\mathrm{Ge}^*$ (13.26 keV). NODE=S030DM2;LINKAGE=KA

[13] KLIMENKO 98 limit is for inelastic scattering $X^0\,{}^{73}\mathrm{Ge} \rightarrow X^0\,{}^{73}\mathrm{Ge}^*$ (66.73 keV). NODE=S030DM2;LINKAGE=KB

[14] BELLI 96 limit for inelastic scattering $X^0\,{}^{129}\mathrm{Xe} \rightarrow X^0\,{}^{129}\mathrm{Xe}^*$(39.58 keV). NODE=S030DM2;LINKAGE=E

[15] BELLI 96C use background subtraction and obtain $\sigma < 0.35$ pb (< 0.15 fb) (90% CL) for spin-dependent (independent) X^0-proton cross section. The confidence level is from R. Bernabei, private communication, May 20, 1999. NODE=S030DM2;LINKAGE=BC

[16] BERNABEI 96 use pulse shape discrimination to enhance the possible signal. The limit here is from R. Bernabei, private communication, September 19, 1997. NODE=S030DM2;LINKAGE=B6

[17] SARSA 96 search for annual modulation of WIMP signal. See SARSA 97 for details of the analysis. The limit here is from M.L. Sarsa, private communication, May 26, 1997. NODE=S030DM2;LINKAGE=G

[18] SMITH 96 use pulse shape discrimination to enhance the possible signal. A dark matter density of 0.4 GeV cm^{-3} is assumed. NODE=S030DM2;LINKAGE=D

[19] GARCIA 95 limit is from the event rate. A weaker limit is obtained from searches for diurnal and annual modulation. NODE=S030DM2;LINKAGE=A

[20] SNOWDEN-IFFT 95 look for recoil tracks in an ancient mica crystal. Similar limits are also given for ^{27}Al and ^{28}Si. See COLLAR 96 and SNOWDEN-IFFT 96 for discussion on potential backgrounds. NODE=S030DM2;LINKAGE=B

[21] BECK 94 uses enriched ^{76}Ge (86% purity). NODE=S030DM2;LINKAGE=C

[22] REUSSER 91 limit here is changed from published (0.3) after reanalysis by authors. J.L. Vuilleumier, private communication, March 29, 1996. NODE=S030DM2;LINKAGE=RS

For $m_{X^0} = 1$ TeV

NODE=S030DM3
NODE=S030DM3

VALUE (nb)	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*	
• • • We do not use the following data for averages, fits, limits, etc. • • •						
< 0.03	90	[1] UCHIDA	14	XMAS	^{129}Xe, inelastic	
< 3	90	[2] ANGLOHER	02	CRES	Al	
		[3] BENOIT	00	EDEL	Ge	
		[4] BERNABEI	99D	CNTR	SIMP	
		[5] DERBIN	99	CNTR	SIMP	
< 0.06	95	[6] KLIMENKO	98	CNTR	^{73}Ge, inel.	
< 0.4	95	[7] KLIMENKO	98	CNTR	^{73}Ge, inel.	OCCUR=2
< 40		ALESSAND...	96	CNTR	O	
<700		ALESSAND...	96	CNTR	Te	OCCUR=2
< 0.05	90	[8] BELLI	96	CNTR	^{129}Xe, inel.	

$<$ 1.5	90	[9] BELLI	96	CNTR	^{129}Xe, inel.	OCCUR=2
		[10] BELLI	96C	CNTR	^{129}Xe	
$<$ 0.01	90	[11] BERNABEI	96	CNTR	Na	OCCUR=2
$<$ 9	90	[11] BERNABEI	96	CNTR	I	OCCUR=3
$<$ 7	95	[12] SARSA	96	CNTR	Na	
$<$ 0.3	90	[13] SMITH	96	CNTR	Na	
$<$ 6	90	[13] SMITH	96	CNTR	I	OCCUR=2
$<$ 6	95	[14] GARCIA	95	CNTR	Natural Ge	
$<$ 8	95	QUENBY	95	CNTR	Na	
$<$ 50	95	QUENBY	95	CNTR	I	OCCUR=2
$<$700	90	[15] SNOWDEN-...	95	MICA	^{16}O	
$<$ 1 $\times 10^3$	90	[15] SNOWDEN-...	95	MICA	^{39}K	OCCUR=2
$<$ 0.8	90	[16] BECK	94	CNTR	^{76}Ge	
$<$ 30	90	BACCI	92	CNTR	Na	
$<$ 30	90	BACCI	92	CNTR	I	OCCUR=2
$<$ 15	90	[17] REUSSER	91	CNTR	Natural Ge	
$<$ 6	95	CALDWELL	88	CNTR	Natural Ge	

[1] UCHIDA 14 limit is for inelastic scattering $X^0 + {}^{129}\text{Xe}^* \rightarrow X^0 + {}^{129}\text{Xe}^*$ (39.58 keV). NODE=S030DM3;LINKAGE=I

[2] ANGLOHER 02 limit is for spin-dependent WIMP-Aluminum cross section. NODE=S030DM3;LINKAGE=AL

[3] BENOIT 00 find four event categories in Ge detectors and suggest that low-energy surface nuclear recoils can explain anomalous events reported by UKDMC and Saclay NaI experiments. NODE=S030DM3;LINKAGE=BN

[4] BERNABEI 99D search for SIMPs (Strongly Interacting Massive Particles) in the mass range 10^3–10^{16} GeV. See their Fig. 3 for cross-section limits. NODE=S030DM3;LINKAGE=DD

[5] DERBIN 99 search for SIMPs (Strongly Interacting Massive Particles) in the mass range 10^2–10^{14} GeV. See their Fig. 3 for cross-section limits. NODE=S030DM3;LINKAGE=B3

[6] KLIMENKO 98 limit is for inelastic scattering $X^0\,{}^{73}\text{Ge} \rightarrow X^0\,{}^{73}\text{Ge}^*$ (13.26 keV). NODE=S030DM3;LINKAGE=KA

[7] KLIMENKO 98 limit is for inelastic scattering $X^0\,{}^{73}\text{Ge} \rightarrow X^0\,{}^{73}\text{Ge}^*$ (66.73 keV). NODE=S030DM3;LINKAGE=KB

[8] BELLI 96 limit for inelastic scattering $X^0\,{}^{129}\text{Xe} \rightarrow X^0\,{}^{129}\text{Xe}^*$(39.58 keV). NODE=S030DM3;LINKAGE=E

[9] BELLI 96 limit for inelastic scattering $X^0\,{}^{129}\text{Xe} \rightarrow X^0\,{}^{129}\text{Xe}^*$(236.14 keV). NODE=S030DM3;LINKAGE=F

[10] BELLI 96C use background subtraction and obtain $\sigma < 0.7$ pb (< 0.7 fb) (90% CL) for spin-dependent (independent) X^0-proton cross section. The confidence level is from R. Bernabei, private communication, May 20, 1999. NODE=S030DM3;LINKAGE=BC

[11] BERNABEI 96 use pulse shape discrimination to enhance the possible signal. The limit here is from R. Bernabei, private communication, September 19, 1997. NODE=S030DM3;LINKAGE=B6

[12] SARSA 96 search for annual modulation of WIMP signal. See SARSA 97 for details of the analysis. The limit here is from M.L. Sarsa, private communication, May 26, 1997. NODE=S030DM3;LINKAGE=G

[13] SMITH 96 use pulse shape discrimination to enhance the possible signal. A dark matter density of 0.4 GeV cm^{-3} is assumed. NODE=S030DM3;LINKAGE=D

[14] GARCIA 95 limit is from the event rate. A weaker limit is obtained from searches for diurnal and annual modulation. NODE=S030DM3;LINKAGE=A

[15] SNOWDEN-IFFT 95 look for recoil tracks in an ancient mica crystal. Similar limits are also given for ^{27}Al and ^{28}Si. See COLLAR 96 and SNOWDEN-IFFT 96 for discussion on potential backgrounds. NODE=S030DM3;LINKAGE=B

[16] BECK 94 uses enriched ^{76}Ge (86% purity). NODE=S030DM3;LINKAGE=C

[17] REUSSER 91 limit here is changed from published (5) after reanalysis by authors. J.L. Vuilleumier, private communication, March 29, 1996. NODE=S030DM3;LINKAGE=RS

Miscellaneous Results from Underground Dark Matter Searches

NODE=S030UDM
NODE=S030UDM

• • • We do not use the following data for averages, fits, limits, etc. • • •

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
		[1] ABE	24A	KLNZ	WIMP-nuclei bound states
		[2] AGNES	24	DS50	search for annual modulation
		[3] ARNQUIST	24A	DAMC	ultralight DM
		[4] ABE	23A	SKAM	boosted DM limits
		[5] ADAMS	23	PICO	inelastic DM search
		[6] ADHIKARI	23B	C100	BDM/heavy photon DM
		[7] AL-KHARUSI	23	EXO2	UDM search
		[8] APRILE	23	XE1T	Planck scale DM search
		[9] HUANG	23	PNDX	scalar DM via dark mediator decay
		[10] NING	23A	PNDX	boosted LDM
		[11] ADHIKARI	22	DEAP	Planck scale DM multiple scatter on Ar
		[12] ADHIKARI	22D	NAI	COSINE-100 annual modulation DM search
		[13] DAI	22A	CDEX	MeV scale exotic DM
		[14] GU	22	PNDX	absorption of fermion DM
		[15] ZHANG	22	PNDX	light DM search

		[16] AKERIB	21B	LUX	limits on WIMP EFT couplings
		[17] AMARE	21	ANAI	annual modulation on NaI
		[18] WANG	21K	CDEX	DM effective operator limits
		[19] AGOSTINI	20	HPGE	keV-MeV scale super-WIMP absorption in Ge
		[20] ANDRIANAV...	20	FUNK	hidden photon DM search
		[21] CLARK	20		superheavy MIMP DM
		[22] ABRAMOFF	19	SENS	MeV DM e-Si; dark photon Si absorption
		[23] ADHIKARI	19	C100	annual modulation NaI
		[24] AMARE	19	ANAI	annual modulation NaI
$<6.4 \times 10^{-10}$	90	[25] APRILE	19	XE1T	π (Xe)
		[26] BRINGMANN	19		cosmic ray DM
		[27] BRUNE	19		Majoran DM
		[28] CHOI	19	THEO	290 TeV IceCube ν
		[29] HA	19	C100	inelastic boosted dark γ
		[30] KLOPF	19		$n \rightarrow \chi e^+ e^-$
		[31] AARTSEN	18D	ICCB	relic WIMP $\chi \rightarrow \nu X$
		[32] ABE	18F	XMAS	$A' e \rightarrow A' e$
		[33] AGNES	18B	DS50	Ar
		[34] AGNESE	18B	SCDM	MeV DM e-Si; dark photon Si absorption
		[35] AKERIB	18A	LUX	Xe
		[36] ARMENGAUD	18	EDE3	Ge
		[37] KACHULIS	18	SKAM	boosted DM on e
$<1 \times 10^{-12}$	90	[38] AGUILAR-AR...	17	DMIC	γ' on Si
		[39] APRILE	17	X100	Xe
		[40] APRILE	17D	X100	Xe
		[41] APRILE	17H	X100	keV bosonic DM search
		[42] APRILE	17K	X100	$\chi N \rightarrow \chi^* \rightarrow \chi \gamma$
$<4 \times 10^{-3}$	90	[43] ANGLOHER	16A	CRES	$CaWO_4$
		[44] APRILE	15	X100	Event rate modulation
		[45] APRILE	15A	X100	Electron scattering

[1] ABE 24A report Kamland-Zen search for de-excitation of WIMP DM bound to nucleus due to small mass splitting with charged WIMP partner. No signal observed. Limits placed in several parameter planes such as charged WIMP decay width vs. mass splitting (e.g. Fig. 7). NODE=S030UDM;LINKAGE=XA

[2] AGNES 24 search for annual modulation signal from wimp interactions in Ar. No signal observed. NODE=S030UDM;LINKAGE=ZA

[3] ARNQUIST 24A report DAMIC-M search for MeV-scale DM scatter on e via mediator. No signal observed. Limits placed in σ(e) vs m plane. NODE=S030UDM;LINKAGE=YA

[4] ABE 23A search for boosted sub-GeV DM using 0.37 Mt·y exposure of SuperK data. No signal observed. Model dependent limits set, see Fig. 3 corrected in ABE 23G erratum. NODE=S030UDM;LINKAGE=RA

[5] ADAMS 23 search for inelastic DM scatter in fluorocarbons. No signal observed. Limits placed in σ vs. m(χ) mass splitting plane. NODE=S030UDM;LINKAGE=UA

[6] ADHIKARI 23B search for boosted heavy photon DM in MeV range using Cosine-100. No signal observed. Limits placed in coupling vs. mass plane for masses 1–100 MeV. NODE=S030UDM;LINKAGE=VA

[7] AL-KHARUSI 23 search for absorption of MeV-scale DM with 234.1 kg·y exposure of ^{136}Xe, triggering beta decay. No signal observed. Limit placed in cross section vs. mass plane for m(χ) = 1.7–11.6 MeV (see Fig. 5). NODE=S030UDM;LINKAGE=OA

[8] APRILE 23 search for multiple scatter events from Planck scale-DM particles. No signal observed. Limits set on σ^{SI} and σ^{SD} on n and p. NODE=S030UDM;LINKAGE=SA

[9] HUANG 23 search for MeV-scale scalar DM interacting via GeV-scale dark mediator. Limits placed on cross section vs. mass plane. NODE=S030UDM;LINKAGE=WA

[10] NING 23A search for boosted LDM arising from η decays which are produced in CR events with 0.63 t·y exposure. No signal observed. Limits placed in $\sigma(\chi N)$ vs. m(χ) plane for various mediator models and branching fraction assumptions (see Fig. 2). NODE=S030UDM;LINKAGE=QA

[11] ADHIKARI 22 search for multiple scatter of Planck scale DM on Ar using DEAP detector. No signal observed. Limits placed in mass vs. cross section plane for m(DM): 10^7–10^{19} GeV. NODE=S030UDM;LINKAGE=GA

[12] ADHIKARI 22D report search for annual modulation signal of DM in a 173 kg·yr exposure of NaI; result consistent with both the modulation amplitude reported by DAMA/LIBRA and no-modulation . NODE=S030UDM;LINKAGE=IA

[13] DAI 22A search for MeV-scale exotic DM interaction with Ge; no signal observed; limits set in m(DM) vs. cross section plane for m(DM) $\sim$ 5–60 MeV in simplified model. NODE=S030UDM;LINKAGE=JA

[14] GU 22 use PANDAX to search for absorption of fermionic DM in MeV range in Xe; no signal observed; limits set in m(DM) vs. cross section plane for m(DM) $\sim$ 30–125 MeV. NODE=S030UDM;LINKAGE=KA

[15] ZHANG 22 search for light DM scatter on e; no signal observed; limits placed in $\sigma \cdot v$ vs. m(DM) plane for m(DM) $\sim$ 10–180 keV. NODE=S030UDM;LINKAGE=LA

[16] AKERIB 21B place limits on 15 WIMP non-relativistic EFT couplings for m(DM): 10–4000 GeV using 3.14 kg d exposure. NODE=S030UDM;LINKAGE=HA

[17] AMARE 21 search for WIMP annual modulation signal on NaI target in the Canfranc Underground Laboratory (LSC). With an effective exposure of 313.95 kg y, and a sensitivity of 2.5 σ no signal is observed. Incompatible with DAMA/LIBRA at 3.3 σ level. NODE=S030UDM;LINKAGE=FA

[18] WANG 21K use CDEX detector to search for WIMP dark matter scatter on Ge; no signal observed; limits placed on 14 non-relativistic effective operators along with WIMP-pion coupling for m(WIMP) $\sim$ 3–20 GeV. NODE=S030UDM;LINKAGE=MA

[19] AGOSTINI 20 search for keV–MeV scale super-WIMP absorption in Ge in GERDA; no signal; limits placed on keV–MeV scale bosonic superWIMPs in coupling vs. mass plane. NODE=S030UDM;LINKAGE=CA

[20] ANDRIANAVALOMAHEFA 20 search for hidden photon DM in eV range; place limits in m(DM) vs ln(χ) plane: exclude coupling $\chi \lesssim 1 \times 10^{-12}$ for m(DM) $\sim$ 2.5–7 eV. NODE=S030UDM;LINKAGE=DA

[21] CLARK 20 use Majorana and Xe-1-ton data to constrain superheavy multply interacting dark matter (MIMP) in range m$\sim$ 10^{8}–10^{17} GeV depending on interaction cross section. NODE=S030UDM;LINKAGE=EA

[22] ABRAMOFF 19 search for MeV scale DM via DM$-e$ scattering and dark photon DM via absorption in Si; limits set in coupling vs. m(χ) plane and on dark photon in m(A) vs. kinetic mixing parameter plane. NODE=S030UDM;LINKAGE=Q

[23] ADHIKARI 19 search for annual modulation signal from WIMP scatter on NaI with 1.7 yr exposure; result consistent with both DAMA/LIBRA and null hypothesis. NODE=S030UDM;LINKAGE=R

[24] AMARE 19 is ANAIS-112 search for WIMP scatter annual modulation on NaI; 157.55 kg yr exposure; result compatible with null hypothesis; confirm goal of reaching sensitivity at 3σ to DAMA/LIBRA result in 5 years. NODE=S030UDM;LINKAGE=U

[25] APRILE 19 search for WIMP-pion scattering in Xe; no signal: require $\sigma(\chi\pi) < 6.4 \times 10^{-10}$ pb for m(χ) = 30 GeV. NODE=S030UDM;LINKAGE=V

[26] BRINGMANN 19 derive theoretically limits on GeV and sub-GeV mass dark matter, in its high energy component generated by interaction with cosmic rays; place limits on σ^{SI} and $\sigma^{SD} < 10^5$ pb. NODE=S030UDM;LINKAGE=Y

[27] BRUNE 19 examine possibility of Majoron dark matter; limits placed on Majoron mass vs. coupling from SN1987a and ν-less double beta decay. NODE=S030UDM;LINKAGE=BA

[28] CHOI 19 from multimessenger observation finds limit on $\sigma(\nu\chi)$/m(DM) $< 5.1 \times 10^{-23}$ cm^2/GeV based on 290 TeV IceCube neutrino event. NODE=S030UDM;LINKAGE=X

[29] HA 19 search for inelastic boosted MeV scale dark photon using COSINE-100 data; limits placed in m vs. epsilon plane for various mediators. NODE=S030UDM;LINKAGE=Z

[30] KLOPF 19 search for DM via $n \rightarrow \chi e^+ e^-$; no signal: limits placed in branching fraction vs. m($e^+ e^-$) plane. NODE=S030UDM;LINKAGE=AA

[31] AARTSEN 18D search for long-lived DM particles decaying $\chi \rightarrow \nu X$; no excess seen; for DM masses above 10 TeV, excluding lifetimes shorter than 10^{28} s. NODE=S030UDM;LINKAGE=L

[32] ABE 18F search for keV mass ALPs and hidden photons (HP) scatter on electrons; limits set on mass vs. coupling. NODE=S030UDM;LINKAGE=M

[33] AGNES 18B search for MeV-scale DM scatter on electrons in Ar; no signal; require $\sigma(\chi e)$ $< 9 \times 10^{-3}$ pb for DM form factor F(DM) = 1 and < 300 pb for F(DM) proportional to 1/q^2 for m(χ) = 100 MeV. NODE=S030UDM;LINKAGE=N

[34] AGNESE 18B search for MeV scale DM via DM-e scattering and dark photon DM via absorption in Si; limits set on MeV DM in coupling vs. m(χ) plane and on dark photon in m(A') vs. kinetic mixing plane. NODE=S030UDM;LINKAGE=I

[35] AKERIB 18A search for annual and diurnal modulation of DM scattering rate on electrons for recoil energy between 2 and 6 keVee; no signal found. NODE=S030UDM;LINKAGE=O

[36] ARMENGAUD 18 search for ALP from the Sun and galactic bosonic DM, interacting in Ge; no signal; limits set for 0.8–500 keV DM particles. NODE=S030UDM;LINKAGE=P

[37] KACHULIS 18 search for an excess of elastically scattered electrons above the atmospheric neutrino background in Super-K; limits placed for simple annihilation or decay in the Sun or galactic center producing "boosted" dark matter. NODE=S030UDM;LINKAGE=K

[38] AGUILAR-AREVALO 17 search for hidden photon DM scatter on Si target CCD; limit kinetic mixing $\kappa < 1 \times 10^{-12}$ for m = 10 eV. NODE=S030UDM;LINKAGE=D

[39] APRILE 17 search for WIMP-e annual modulation signal for recoil energy in the 2.0–5.8 keV interval using 4 years data with Xe. No significant effect seen. NODE=S030UDM;LINKAGE=E

[40] APRILE 17D set limits on 14 WIMP-nucleon different interaction operators. No deviations found using 225 live days in the 6.6–240 keV recoil energy range. NODE=S030UDM;LINKAGE=F

[41] APRILE 17H search for keV bosonic DM via $e\chi \rightarrow e$, looking for electronic recoils with 224.6 live days of data and 34 kg of LXe. Limits set on $\chi e e$ coupling for m(χ) = 8–125 keV. NODE=S030UDM;LINKAGE=G

[42] APRILE 17K search for magnetic inelastic DM via $\chi N \rightarrow \chi^* \rightarrow \chi\gamma$. Limits set in DM magnetic moment vs. mass splitting plane for two DM masses corresponding to the DAMA/LIBRA best fit values. NODE=S030UDM;LINKAGE=H

[43] ANGLOHER 16A require q^2 dependent scattering $< 8 \times 10^{-3}$ pb for asymmetric DM m(WIMP) = 3 GeV on $CaWO_4$ target. It uses a local dark matter density of 0.38 GeV/cm^3. NODE=S030UDM;LINKAGE=C

[44] APRILE 15 search for periodic variation of electronic recoil event rate in the data between Feb. 2011 and Mar. 2012. No significant modulation is found for periods up to 500 days. NODE=S030UDM;LINKAGE=A

[45] APRILE 15A search for X^0 scattering off electrons. See their Fig. 4 for limits on cross section through axial-vector coupling for m_{X^0} between 0.6 GeV and 1 TeV. For m_{X^0} = 2 GeV, $\sigma < 60$ pb (90%CL) is obtained. NODE=S030UDM;LINKAGE=B

X^0 Annihilation Cross Section

NODE=S030DMA

Limits are on σv for X^0 pair annihilation for the X^0 mass specified in the footnote when needed.

NODE=S030DMA

NODE=S030DMA

VALUE (cm^{3}s^{-1})	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<2 \times 10^{-24}$	95	[1] ACHARYYA	24	VRTS	TeV-scale wimp annihilation
$<2 \times 10^{-22}$	95	[2] CAO	24	LHAS	superheavy WIMP annihilation
		[3] CHOLIS	24		γ-ray background
		[4] CRNOGORC...	24		Ursa-Major III DM annihilation
		[5] DE-LA-TORR...	24		WIMP annihilation to gammas
$<6.4 \times 10^{-26}$		[6] MANNA	24		wimp annihilation to gammas from galaxy clusters
$<2 \times 10^{-26}$	95	[7] MCDANIEL	24	FLAT	combined WIMP annihilation in dwarf spheroidals
$<2 \times 10^{-26}$	95	[8] MCDANIEL	24	FLAT	combined Fermi-LAT dwarf spheroidal constraints
		[9] SONG	24	FLAT	heavy WIMPs
		[10] SONG	24A	FLAT	heavy WIMP annihilation in galaxy clusters
$<1 \times 10^{-33}$	95	[11] ZAKHAROV	24A		keV-scale DM annihlation
$<1 \times 10^{-24}$	90	[12] ABBASI	23A	ICCB	WIMP annihilation to ν's
$<1 \times 10^{-22}$	90	[13] ABBASI	23B	ICCB	PeV WIMP annihilation
$<5 \times 10^{-28}$	95	[14] ABE	23B	MGIC	Wimp annihilation to γ
		[15] ALBERT	23	HAWC	WIMP annihilation to γ in galactic halo
		[16] CHENG	23A		Fermi-LAT and DAMPE combined γ line search
$<2 \times 10^{-25}$	95	[17] FOSTER	23	FLAT	DM annihilation to gamma line
		[18] GUO	23	FAST	DM annihilation in dwarf spheroidal galaxy
		[19] GUO	23A		WIMP annihilation in dwarf spheroidal galaxies
$<2 \times 10^{-26}$	95	[20] LAVIS	23		$b\overline{b}$ + 2HDM+S, m<1000 GeV
$<1.2 \times 10^{-26}$	95	[21] ABDALLA	22	HESS	DM annihilation to gamma rays
		[22] ALBERT	22A	ANTR	PeV-scale DM search
$<1 \times 10^{-27}$		[23] CHAN	22		DM annihilation from Omega Centauri X-rays
$<3 \times 10^{-26}$		[24] EGOROV	22		DM annihilation to radio waves from M31
		[25] MANCONI	22		polarized synchrotron emission from DM annihilation via Planck
$<5 \times 10^{-24}$	95	[26] ABDALLAH	21	HESS	WIMP annihilation in dwarf irregular galaxy
		[27] CIRELLI	21		light DM annihilation producing X-rays
		[28] JOHN	21		cosmic positron spectra limits on leptophilic DM
$<2.5 \times 10^{-27}$	95	[29] ABAZAJIAN	20	FLAT	γ from galactic center
		[30] ABDALLAH	20	HESS	WIMP annihilation in dwarf satellite galaxies
$<1.2 \times 10^{-24}$	90	[31] ABE	20G	SKAM	WIMP annihilation to neutrinos
$<2.2 \times 10^{-24}$	95	[32] ALBERT	20	HAWC	WIMP annihilation to γ
$<5 \times 10^{-24}$	90	[33] ALBERT	20A	ANTR	WIMP annihilation to νs in galactic center
$<1 \times 10^{-23}$	90	[34] ALBERT	20C	ANTR	Antares/IceCube search for WIMP annihilation to νs
$<8 \times 10^{-26}$		[35] ALVAREZ	20	FLAT	dwarf spheroidal; J-distribution
$<2 \times 10^{-26}$	90	[36] HOOF	20	FLAT	WIMP annihilation to γ
		[37] MAZZIOTTA	20	FLAT	DM annihilation in Sun to γ
		[38] ABEYSEKARA	19	HAWC	DM annihilation to γs within galactic substructure
$<0.8 \times 10^{-22}$	95	[39] ALBERT	19B	HAWC	annihilation/decay to γ in M31
$<4 \times 10^{-26}$	95	[40] CHEUNG	19	EDGS	$\chi\chi \rightarrow e^+e^-$ and $b\overline{b}$
$<7 \times 10^{-27}$	95	[41] DI-MAURO	19	FLAT	Fermi-LAT M31 and M33
		[42] JOHNSON	19	FLAT	P-wave DM; Fermi-LAT
$<2 \times 10^{-26}$	95	[43] LI	19D	FLAT	$\chi\chi \rightarrow \gamma$
$<1 \times 10^{-32}$		[44] NG	19		sterile ν decay/annihilation
		[45] QUEIROZ	19		semi-annihilating DM
$<4 \times 10^{-28}$	95	[46] ABDALLAH	18	HESS	$X^0X^0 \rightarrow \gamma X$; galactic halo
$<1 \times 10^{-23}$	95	[47] AHNEN	18	MGIC	$X^0X^0 \rightarrow \gamma X$; Ursa Major II
$<1 \times 10^{-22}$	95	[48] ALBERT	18B	HAWC	$X^0X^0 \rightarrow \gamma X$; Andromeda
$<1 \times 10^{-26}$	95	[49] CHANG	18A		$\chi\chi \rightarrow b\overline{b} \rightarrow \gamma$

OCCUR=2

		[50] LISANTI	18	THEO	Fermi, γ; galaxy groups	
		[51] MAZZIOTTA	18	FLAT	Fermi-LAT CRE data	
$<1.2 \times 10^{-23}$	95	[52] AARTSEN	17C	ICCB	$\chi\chi \rightarrow$ neutrinos	
$<1 \times 10^{-23}$	90	[53] ALBERT	17A	ANTR	ν, DM annihilation	
$<1.32 \times 10^{-25}$	95	[54] ARCHAMBAU...	17	VRTS	γ dwarf galaxies	OCCUR=3
$<7 \times 10^{-21}$	90	[55] AVRORIN	17	BAIK	cosmic ν	
$<1 \times 10^{-28}$		[56] BOUDAUD	17		MeV DM to e^+e^-	
		[57] AARTSEN	16D	ICCB	ν, galactic center	
$<6 \times 10^{-26}$	95	[58] ABDALLAH	16	HESS	Central Galactic Halo	
$<1 \times 10^{-27}$	95	[59] ABDALLAH	16A	HESS	WIMP+WIMP $\rightarrow \gamma\gamma$; galactic center	
$<3 \times 10^{-26}$	95	[60] AHNEN	16	MGFL	Satellite galaxy, m(WIMP)=100 GeV	
$<1.9 \times 10^{-21}$	90	[61] AVRORIN	16	BAIK	νs from galactic center	
$<3 \times 10^{-26}$	95	[62] CAPUTO	16	FLAT	small Magellanic cloud	
$<1 \times 10^{-25}$	95	[63] FORNASA	16	FLAT	Fermi-LAT γ-ray anisotropy	
$<5 \times 10^{-27}$		[64] LEITE	16		WIMP, radio	
$<2 \times 10^{-26}$	95	[65] LI	16	FLAT	dwarf galaxies	
$<1 \times 10^{-25}$	95	[66] LI	16A	FLAT	Fermi-LAT; M31	
$<1 \times 10^{-26}$		[67] LIANG	16	FLAT	Fermi-LAT, gamma line	
$<1 \times 10^{-25}$	95	[68] LU	16	FLAT	Fermi-LAT and AMS-02	
$<1 \times 10^{-23}$	95	[69] SHIRASAKI	16	FLAT	extra galactic	
		[70] AARTSEN	15C	ICCB	ν, Galactic halo	
		[71] AARTSEN	15E	ICCB	ν, Galactic center	
		[72] ABRAMOWSKI	15	HESS	Galactic center	
		[73] ACKERMANN	15	FLAT	monochromatic γ	
		[74] ACKERMANN	15A	FLAT	isotropic γ background	
		[75] ACKERMANN	15B	FLAT	Satellite galaxy	
		[76] ADRIAN-MAR...	15	ANTR	ν, Galactic center	
$<2.90 \times 10^{-26}$	95	[77,78] ACKERMANN	14	FLAT	Satellite galaxy, m = 10 GeV	
$<1.84 \times 10^{-25}$	95	[77,79] ACKERMANN	14	FLAT	Satellite galaxy, m = 100 GeV	OCCUR=2
$<1.75 \times 10^{-24}$	95	[77,79] ACKERMANN	14	FLAT	Satellite galaxy, m = 1 TeV	OCCUR=3
$<4.52 \times 10^{-24}$	95	[80] ALEKSIC	14	MGIC	Segue 1, m = 1.35 TeV	
		[81] AARTSEN	13C	ICCB	Galaxies	
		[82] ABRAMOWSKI	13	HESS	Central Galactic Halo	
		[83] ACKERMANN	13A	FLAT	Galaxy	
		[84] ABRAMOWSKI	12	HESS	Fornax Cluster	
		[85] ACKERMANN	12	FLAT	Galaxy	
		[86] ACKERMANN	12	FLAT	Galaxy	OCCUR=2
		[87] ALIU	12	VRTS	Segue 1	
$<1 \times 10^{-22}$	90	[88] ABBASI	11C	ICCB	Galactic halo, m=1 TeV	
$<3 \times 10^{-25}$	95	[89] ABRAMOWSKI	11	HESS	Near Galactic center, m=1 TeV	
$<1 \times 10^{-26}$	95	[90] ACKERMANN	11	FLAT	Satellite galaxy, m=10 GeV	
$<1 \times 10^{-25}$	95	[90] ACKERMANN	11	FLAT	Satellite galaxy, m=100 GeV	OCCUR=2
$<1 \times 10^{-24}$	95	[90] ACKERMANN	11	FLAT	Satellite galaxy, m=1 TeV	OCCUR=3

[1] ACHARYYA 24 search for TeV-scale wimp annihilation in dwarf spheroidals. No signal observed. Limits placed on $\langle\sigma\cdot v\rangle$ vs. m(wimp) in various annihilation channels. Quoted limit for $\chi\chi \rightarrow WW$. NODE=S030DMA;LINKAGE=JC

[2] CAO 24 search for superheavy WIMP annihilation in dwarf spheroidals to $b\overline{b}$ or $\tau\overline{\tau}$. No signal observed. Limits set in $\langle\sigma\cdot v\rangle$ vs. m(WIMP) plane. Quoted limit for $b\overline{b}$ with m(WIMP) = 1 TeV. NODE=S030DMA;LINKAGE=CC

[3] CHOLIS 24 derive limits on wimp annihilation contribution to Fermi-LAT observation of isotropic gamma ray background. Limits set in $\langle\sigma\cdot v\rangle$ vs m plane for various $\chi\chi$ annihilation channel. NODE=S030DMA;LINKAGE=KC

[4] CRNOGORCEVIC 24 interpret published Fermi-LAT data aimed at Ursa-Major III to derive limits on WIMP annihilation in high J-factor dwarf spheroidal. Fermi-LAT limits are recast in $\langle\sigma\cdot v\rangle$ vs m plane depend on J and on assumed annihilation channel. NODE=S030DMA;LINKAGE=DC

[5] DE-LA-TORRE-LUQUE 24 analyze 15 years Fermi-LAT data for m(WIMP) 10–300 GeV annihilation to photons. No signal observed. Limits placed in $\langle\sigma\cdot v\rangle$ vs m plane for several models motivated by galactic center excess. NODE=S030DMA;LINKAGE=EC

[6] MANNA 24 analyze SPT-SZ survay for 1–300 GeV gamma rays from wimp annihilation in galaxy clusters. Some slight signals observed in conflict with dwarf spheroidal searches. Limits in $\langle\sigma\cdot v\rangle$ vs m plane; quoted limit is for m(wimp) = 10 GeV in $b\overline{b}$ annihilation channel. NODE=S030DMA;LINKAGE=MC

[7] MCDANIEL 24 combined 14.3 years Fermi-LAT data from multiple dwarf spheroidals to gain updated bounds on WIMP annihilation rates with some 2σ excesses claimed. Reported limit is for 100 GeV WIMP mass. NODE=S030DMA;LINKAGE=FC

[8] MCDANIEL 24 perform combined 14 year Fermi-LAT analysis of gammas from dwarf spheroidals. New limits obtained from Fig. 6. Quoted value for m(WIMP) = 100 GeV in $b\overline{b}$ and $\tau\overline{\tau}$ annihilation channels. NODE=S030DMA;LINKAGE=IC

[9] SONG 24 use Fermi-LAT data to constrain heavy 10^3–10^{11} GeV DM annihilation and decay. Limits placed in $\langle\sigma{\cdot}v\rangle$ vs. m and lifetime vs. m planes. NODE=S030DMA;LINKAGE=GC

[10] SONG 24A examine Fermi-LAT gamma ray data from superheavy WIMP annihilation/decay in galaxy clusters. Limits placed in $\langle\sigma{\cdot}v\rangle$ vs m and lifetime vs m planes for a variety of annihilation/decay modes. NODE=S030DMA;LINKAGE=HC

[11] ZAKHAROV 24A derive limits DM annihilation to X-rays in the 4–15 keV particle mass range via SRG/ART-XC telescope. Limits placed in $\langle\sigma{\cdot}v\rangle$ vs m plane. Quoted limit is from MW halo for m = 10 keV, see Fig. 10. NODE=S030DMA;LINKAGE=LC

[12] ABBASI 23A search for WIMP-WIMP annihilation to ν's. No signal observed. Require $\langle\sigma{\cdot}v\rangle < 10^{-24}$ cm^3/s for m(χ) $\sim$ 10–10 $\times$ 10^4 GeV for various halo profiles. NODE=S030DMA;LINKAGE=VB

[13] ABBASI 23B search for PeV-scale WIMP-WIMP annihilation to μ or b pairs. No signal observed. Require $\langle\sigma{\cdot}v\rangle < 10^{-22}$ cm^3/s for $\chi\chi \rightarrow b\overline{b}$ with m(χ) about 1 PeV or $\langle\sigma{\cdot}v\rangle < 10^{-23}$ cm^3/s for $\chi\chi \rightarrow \mu^+\mu^-$ with m(χ) about 1 PeV. NODE=S030DMA;LINKAGE=WB

[14] ABE 23B search for WMP-WIMP annihilation to γ in GC. No signal observed. Require $\langle\sigma{\cdot}v\rangle < 5\times10^{-28}$ cm^3/s for m(χ) = 1 TeV or $\langle\sigma{\cdot}v\rangle < 1\times10^{-25}$ cm^3/s for m(χ) = 100 TeV. NODE=S030DMA;LINKAGE=RB

[15] ALBERT 23 search for WIMP pair annihilation to γ in galactic halo. No signal observed. Limits placed in $\langle\sigma{\cdot}v\rangle$ vs. mass (10–100 TeV) plane for various annihilation channels. NODE=S030DMA;LINKAGE=YB

[16] CHENG 23A provide updated combined Fermi-LAT/DAMPE search for gamma line from WIMP annihilation. No signal observed. Limits placed in $\langle\sigma{\cdot}v\rangle$ vs. mass (6–200 GeV) plane for various halo profiles. NODE=S030DMA;LINKAGE=ZB

[17] FOSTER 23 search for gamma ray line in Fermi-LAT data. No signal observed. Limits placed in $\langle\sigma{\cdot}v\rangle$ vs. m(χ) plane. For Higgsino DM limit see Fig. 12. NODE=S030DMA;LINKAGE=SB

[18] GUO 23 search with Five-hundred-meter Aperture Spherical Radio Telescope for synchrotron emission radio signal of DM annihilation from dwarf spheroidal galaxy. No signal observed. Limits set in $\langle\sigma{\cdot}v\rangle$ vs. m(χ) plane for various annihilation final states. NODE=S030DMA;LINKAGE=TB

[19] GUO 23A search in public IceCube data for DM annihilation to neutrinos. No signal observed. Limits placed in $\langle\sigma{\cdot}v\rangle$ vs m(χ) plane for various annihilation assumptions. NODE=S030DMA;LINKAGE=UB

[20] LAVIS 23 search for 2HDM+S DM and generic spectra using MeerKAT. No signal observed. Limits placed in $\langle\sigma{\cdot}v\rangle$ vs. mass (10–1000 GeV) plane for various annihilation channels. NODE=S030DMA;LINKAGE=BC

[21] ABDALLA 22 search for WIMP annihilation in galactic center to gamma rays using HESS; no signal observed; limits set in mass vs $\langle\sigma{\cdot}v\rangle$ plane for dominant annihilation to WW or $\tau\overline{\tau}$. Limit here for $\tau\overline{\tau}$ channel 0.7 TeV mass. NODE=S030DMA;LINKAGE=PB

[22] ALBERT 22A search for secluded PeV-scale DM annihilation to four final states; no signal detected; limits placed in $\langle\sigma{\cdot}v\rangle$ vs. m(χ) plane for m(χ): 6–6000 TeV for m(mediator) = 50, 250, and 1000 GeV. NODE=S030DMA;LINKAGE=MB

[23] CHAN 22 derive a variety of limits on DM annihilation to various channels resulting in X-rays from dwarf galaxy Omega Centauri. Limits are very dependent on assumed DM density and diffusion coefficient. Quoted limit is for m(WIMP) = 100 GeV annihilating to WW with parameters as in Fig. 4. NODE=S030DMA;LINKAGE=NB

[24] EGOROV 22 derives limits on DM annihlation to $b\overline{b}$ or $\tau\overline{\tau}$ via radio signals from M31; quoted limit from $b\overline{b}$ channel with LOFAR telescope as main data source, using parameters as in Fig. 10 (green curve) for m(χ) = 100 GeV. NODE=S030DMA;LINKAGE=OB

[25] MANCONI 22 use polarized synchrotron emission data from Planck to constrain WIMP annihilation cross section in Galaxy; limits set in $\langle\sigma{\cdot}v\rangle$ vs. m(DM) plane. NODE=S030DMA;LINKAGE=QB

[26] ABDALLAH 21 search for WIMP-WIMP annihilation into 2 monoenergetic γ rays in WLM dwarf irregular galaxy using HESS data. No signal. Limits placed in $\langle\sigma{\cdot}v\rangle$ vs. m(WIMP) plane for a mass of 370 GeV. NODE=S030DMA;LINKAGE=IB

[27] CIRELLI 21 derive limits on light DM annihilation to ee, $\mu\mu$, $\pi\pi$ that then produce X-rays using data published by INTEGRAL telescope. Limits placed in $\langle\sigma{\cdot}v\rangle$ vs. m(DM) plane for m(DM) = 1–5000 MeV. NODE=S030DMA;LINKAGE=JB

[28] JOHN 21 derive limits on leptophilic DM annihilating to positrons by comparing expected spectra to AMS-02 data. The range m(DM): 60–300 GeV appears excluded for this type of model, see Fig. 3. NODE=S030DMA;LINKAGE=LB

[29] ABAZAJIAN 20 derive new limits on WIMP annihilation in galactic center (GC): $\langle\sigma{\cdot}v\rangle < 2.5\times10^{-27}$ cm^3/s for m(WIMP) = 50 GeV: seems to rule out WIMP explanation for GC γ excess, favouring an astrophysics origin. NODE=S030DMA;LINKAGE=YA

[30] ABDALLAH 20 search for WIMP annihilation in newly discovered by DES dwarf satellite galaxies using HESS; limits placed in $\langle\sigma{\cdot}v\rangle$ vs. m(DM) plane depending on annihilation channel and which dwarf satellite. NODE=S030DMA;LINKAGE=FB

[31] ABE 20G search Super-Kamiokande data for WIMP annihilation to neutrinos in galactic center/halo; no signal; limits placed in $\langle\sigma{\cdot}v\rangle$ vs. m(DM) plane depending on annihilation channel and m(WIMP). Reported limit for annihilation to $\nu\overline{\nu}$ at 1 GeV. NODE=S030DMA;LINKAGE=GB

[32] ALBERT 20 search for TeV-scale WIMP annihlation to $\gamma\gamma$ in dwarf spheroidal galaxies; no signal; limits placed in $\sigma{\cdot}v$ vs m(WIMP) plane: e.g. $\sigma{\cdot}v < 2.2\times10^{-24}$ cm^3/s for m(WIMP) = 1 TeV. NODE=S030DMA;LINKAGE=ZA

[33] ALBERT 20A search for WIMP annihilation to νs in galactic center using Antares; limits placed in $\sigma\cdot$v vs m(WIMP) plane e.g. $\sigma\cdot$v $< 5\times10^{-24}$ cm^3/s for m(WIMP) = 1 TeV assuming annihilation dominantly to $\tau\overline{\tau}$. NODE=S030DMA;LINKAGE=BB

[34] ALBERT 20C report combined Antares + IceCube search for WIMP annihilation to $\tau\overline{\tau}$; for NFW halo profile report $\sigma{\cdot}v < 1\times10^{-23}$ cm^3/s for m(WIMP) = 100 GeV. NODE=S030DMA;LINKAGE=HB

[35] ALVAREZ 20 use profiling over J-factor distributions and background to derive new limits on $\sigma\cdot$v; e.g. $\sigma\cdot$v $< 8\times10^{-26}$ cm^3/s for m(WIMP) = 100 GeV. NODE=S030DMA;LINKAGE=CB

[36] HOOF 20 examine γ rays from 27 dwarf spheroidals using Fermi-LAT data; place limits in $\sigma \cdot$ v vs m(WIMP) plane using profile likelihood and marginalized posterior techniques for DM annihilation to $\tau\overline{\tau}$ and $b\overline{b}$; quoted limit uses first technique and $b\overline{b}$ channel for m(WIMP) = 100 GeV; results rule out WIMP explanation of galactic center excess. NODE=S030DMA;LINKAGE=DB

[37] MAZZIOTTA 20 use Fermi-LAT pointed-at-Sun data to search for DM annihilation in the Sun to long-lived mediators decaying into gamma rays, i.e. $\chi\chi \rightarrow \phi\phi \rightarrow 4\gamma$. Limits placed on the SI and SD DM-nucleon cross sections in the σ–DM mass plane for DM masses in the range 3 GeV – 1.8 TeV. Limits are evaluated in both cases of equilibrium and non-equilibrium. NODE=S030DMA;LINKAGE=EB

[38] ABEYSEKARA 19 search for γs from DM annihilation in galactic substructures with HAWC; no signal, limits placed in J$\langle\sigma{\cdot}v\rangle$ vs. declination plane for m(DM) $\sim$ 1–108 TeV. NODE=S030DMA;LINKAGE=WA

[39] ALBERT 19B search for DM signal from M31 galaxy in μ, τ, t, b, W channels using HAWC for m(DM) $\sim$ 1–100 TeV; no signal, limits placed in $\langle\sigma{\cdot}v\rangle$ vs. m(DM) plane. NODE=S030DMA;LINKAGE=XA

[40] CHEUNG 19 derive model-dependent bounds on $\langle\sigma{\cdot}v\rangle$ from EDGES data: $< 4\times10^{-26}$ cm^3/s for e^+e^- and $b\overline{b}$ for m(χ) = 100 GeV (including boost factor). NODE=S030DMA;LINKAGE=QA

[41] DI-MAURO 19 place limits on WIMP annihilation via Fermi-LAT observation of M31 and M33 galaxies: $\langle\sigma{\cdot}v\rangle < 7\times10^{-27}$cm^3/s for m($\chi$) = 20 GeV from M31. NODE=S030DMA;LINKAGE=RA

[42] JOHNSON 19 search for γ-rays, 10–600 GeV energy, from P-wave annihilating DM around SgrA* BH using Fermi-LAT; limits set for various models. NODE=S030DMA;LINKAGE=SA

[43] LI 19D search for $\chi\chi \rightarrow \gamma$ in Fermi-LAT data; no signal, require $\langle\sigma{\cdot}v\rangle < 2\times10^{-26}$ cm^3/s for m(χ) = 100 GeV. NODE=S030DMA;LINKAGE=TA

[44] NG 19 search for X-ray line from sterile ν decay/annihilation using NuStar M-31; no signal: limits placed in m(ν) vs mixing angle and $\langle\sigma{\cdot}v\rangle$ vs m(ν). NODE=S030DMA;LINKAGE=UA

[45] QUEIROZ 19 examine $\chi\chi \rightarrow \chi SM$ semi-annihilation of DM reaction; limits placed for various assumed SM particles in $\langle\sigma{\cdot}v\rangle$ vs. m(χ) plane. NODE=S030DMA;LINKAGE=VA

[46] ABDALLAH 18 search for WIMP WIMP $\rightarrow \gamma X$ in central galactic halo, 10 years of data; limits placed in $\langle\sigma{\cdot}v\rangle$ vs. m(WIMP) plane for m(WIMP): 0.3–70 TeV. NODE=S030DMA;LINKAGE=JA

[47] AHNEN 18 search for WIMP WIMP$\rightarrow \gamma X$ from Ursa Major II; limits set in $\langle\sigma{\cdot}v\rangle$ vs. m(WIMP) plane for $b\overline{b}$, W^+W^-, $\tau^+\tau^-$, and $\mu^+\mu^-$ annihilation modes. NODE=S030DMA;LINKAGE=KA

[48] ALBERT 18B search for TeV-scale WIMPs with WIMP WIMP $\rightarrow \gamma X$ in Andromeda galaxy using HAWC Observatory; limits set in $\langle\sigma{\cdot}v\rangle$ vs m(WIMP) plane. NODE=S030DMA;LINKAGE=LA

[49] CHANG 18A examine $\chi\chi \rightarrow b\overline{b} \rightarrow \gamma$ using Fermi Pass 8 data; no signal; require $\langle\sigma{\cdot}v\rangle < 10^{-26}$ cm^3/s for m(χ) = 50 GeV. NODE=S030DMA;LINKAGE=PA

[50] LISANTI 18 examine Fermi Pass 8 γ-ray data from galaxy groups; report m(WMP) $>$ 30 GeV for annihilation in $b\overline{b}$ channel. NODE=S030DMA;LINKAGE=NA

[51] MAZZIOTTA 18 examine Fermi-LAT electron and positron spectra searching for features originating from DM particles annihilation into e^+e^- pairs, from 45 GeV to 2 TeV; no signal found, limits are obtained. NODE=S030DMA;LINKAGE=OA

[52] AARTSEN 17C use 1005 days of IceCube data to search for $\chi\chi \rightarrow$ neutrinos via various annihilation channels. Limits set. NODE=S030DMA;LINKAGE=GA

[53] ALBERT 17A search for DM annihilation to νs using ANTARES data from 2007–2015. No signal. Limits set in $\langle\sigma{\cdot}v\rangle$ vs. m(DM) plane for m(DM) $\sim$ 10–10 $\times$ 10^5 GeV. The listed limit is for m(DM) = 100 TeV. NODE=S030DMA;LINKAGE=BA

[54] ARCHAMBAULT 17 set limits for WIMP mass between 100 GeV and 1 TeV on $\langle\sigma{\cdot}v\rangle$ for W^+W^-, ZZ, $b\overline{b}$, $s\overline{s}$, $u\overline{u}$, $d\overline{d}$, $t\overline{t}$, e^+e^-, gg, $c\overline{c}$, hh, $\gamma\gamma$, $\mu^+\mu^-$,$\tau^+\tau^-$ annihilation channels. NODE=S030DMA;LINKAGE=DA

[55] AVRORIN 17 find upper limits for the annhilation cross section in various channels for DM particle mass between 30 GeV and 10 TeV. Strongest upper limits coming from the two neutrino channel require $\langle\sigma{\cdot}v\rangle < 6\times10^{-20}$ cm^3/s in dwarf galaxies and $\langle\sigma{\cdot}v\rangle < 7\times10^{-21}$ cm^3/s in LMC for 5 TeV WIMP mass. NODE=S030DMA;LINKAGE=FA

[56] BOUDAUD 17 use data from the spacecraft Voyager 1, beyond the heliopause, and from AMS02 on $\chi\chi \rightarrow e^+e^-$ to require $\langle\sigma{\cdot}v\rangle < 1.\times10^{-28}$ cm^3/s for m(χ) = 10 MeV. NODE=S030DMA;LINKAGE=EA

[57] AARTSEN 16D search for GeV νs from WIMP annihilation in galaxy; limits set on $\langle\sigma{\cdot}v\rangle$ in Fig. 6, 7. NODE=S030DMA;LINKAGE=U

[58] ABDALLAH 16 require $\langle\sigma{\cdot}v\rangle < 6\times10^{-26}$ cm^3/s for m(WIMP) = 1.5 TeV from 254 hours observation (WW channel) and $< 2\times10^{-26}$ cm^3/s for m(WIMP) = 1.0 TeV in $\tau^+\tau^-$ channel. NODE=S030DMA;LINKAGE=N

[59] ABDALLAH 16A search for line spectra from WIMP + WIMP $\rightarrow \gamma\gamma$ in 18 hr HESS data; rule out previous 130 GeV WIMP hint from Fermi-LAT data. NODE=S030DMA;LINKAGE=V

[60] AHNEN 16 require $\langle\sigma{\cdot}v\rangle < 3\times10^{-26}$ cm^3/s for m(WIMP) = 100 GeV (WW channel). NODE=S030DMA;LINKAGE=O

[61] AVRORIN 16 require $\langle$s.v$\rangle < 1.91\times10^{-21}$ cm^3/s from WIMP annihilation to νs via WW channel for m(WIMP) = 1 TeV. NODE=S030DMA;LINKAGE=P

[62] CAPUTO 16 place limits on WIMPs from annihilation to gamma rays in Small Magellanic Cloud using Fermi-LaT data: $\langle\sigma{\cdot}v\rangle < 3\times10^{-26}$cm^3/s for m(WIMP) = 10 GeV. NODE=S030DMA;LINKAGE=Q

[63] FORNASA 16 use anisotropies in the γ-ray diffuse emission detected by Fermi-LAT to bound $\langle\sigma{\cdot}v\rangle < 10^{-25}$cm^3/s for m(WIMP) = 100 GeV in $b\overline{b}$ channel: see Fig. 28. The limit is driven by dark-matter subhalos in the Milky Way and it refers to their Most Constraining Scenario. NODE=S030DMA;LINKAGE=W

[64] LEITE 16 constrain WIMP annihilation via search for radio emissions from Smith cloud; $\langle\sigma{\cdot}v\rangle < 5\times10^{-27}$cm^3/s in ee channel for m(WIMP) = 5 GeV. NODE=S030DMA;LINKAGE=X

[65] LI 16 re-analyze Fermi-LAT data on 8 dwarf spheroidals; set limit $\langle\sigma{\cdot}v\rangle < 2\times10^{-26}$ cm^3/s for m(WIMP) = 100 GeV in $b\overline{b}$ mode with substructures included. NODE=S030DMA;LINKAGE=R

[66] LI 16A constrain $\langle\sigma{\cdot}v\rangle < 10^{-25}cm^3$/s in $b\overline{b}$ channel for m(WIMP) = 100 GeV using Fermi-LAT data from M31; see Fig. 6. NODE=S030DMA;LINKAGE=Y

[67] LIANG 16 search dwarf spheroidal galaxies, Large Magellanic Cloud, and Small Magellanic Cloud for γ-line in Fermi-LAT data. NODE=S030DMA;LINKAGE=Z

[68] LU 16 re-analyze Fermi-LAT and AMS-02 data; require $\langle\sigma{\cdot}v\rangle < 10^{-25}cm^3$/s for m_m(WIMP) = 1 TeV in $b\overline{b}$ channel. NODE=S030DMA;LINKAGE=S

[69] SHIRASAKI 16 re-anayze Fermi-LAT extra-galactic data; require $\langle\sigma{\cdot}v\rangle < 10^{-23}cm^3$/s for m(WIMP) = 1 TeV in $b\overline{b}$ channel; see Fig. 8. NODE=S030DMA;LINKAGE=T

[70] AARTSEN 15C search for neutrinos from X^0 annihilation in the Galactic halo. See their Figs. 16 and 17, and Table 5 for limits on $\sigma\cdot$v for X^0 mass between 100 GeV and 100 TeV. NODE=S030DMA;LINKAGE=M

[71] AARTSEN 15E search for neutrinos from X^0 annihilation in the Galactic center. See their Figs. 7 and 9, and Table 3 for limits on $\sigma\cdot$v for X^0 mass between 30 GeV and 10 TeV. NODE=S030DMA;LINKAGE=L

[72] ABRAMOWSKI 15 search for γ from X^0 annihilation in the Galactic center. See their Fig. 4 for limits on $\sigma\cdot$v for X^0 mass between 250 GeV and 10 TeV. NODE=S030DMA;LINKAGE=K

[73] ACKERMANN 15 search for monochromatic γ from X^0 annihlation in the Galactic halo. See their Fig. 8 and Tables 2–4 for limits on $\sigma\cdot$v for X^0 mass between 0.2 GeV and 500 GeV. NODE=S030DMA;LINKAGE=H

[74] ACKERMANN 15A search for γ from X^0 annihilation (both Galactic and extragalactic) in the isotropic γ background. See their Fig. 7 for limits on $\sigma\cdot$v for X^0 mass between 10 GeV and 30 TeV. NODE=S030DMA;LINKAGE=G

[75] ACKERMANN 15B search for γ from X^0 annihilation in 15 dwarf spheroidal satellite galaxies of the Milky Way. See their Figs. 1 and 2 for limits on $\sigma\cdot$v for X^0 mass between 2 GeV and 10 TeV. NODE=S030DMA;LINKAGE=I

[76] ADRIAN-MARTINEZ 15 search for neutrinos from X^0 annihilation in the Galactic center. See their Figs. 10 and 11 and Tables 1 and 2 for limits on $\sigma\cdot$v for X^0 mass between 25 GeV and 10 TeV. NODE=S030DMA;LINKAGE=J

[77] ACKERMANN 14 search for γ from X^0 annihilation in 25 dwarf spheroidal satellite galaxies of the Milky Way. See their Tables II–VII for limits assuming annihilation into e^+e^-, $\mu^+\mu^-$, $\tau^+\tau^-$, $u\overline{u}$, $b\overline{b}$, and W^+W^-, for X^0 mass ranging from 2 GeV to 10 TeV. NODE=S030DMA;LINKAGE=AA

[78] Limit assuming X^0 pair annihilation into $b\overline{b}$. NODE=S030DMA;LINKAGE=XB

[79] Limit assuming X^0 pair annihilation into W^+W^-. NODE=S030DMA;LINKAGE=XW

[80] ALEKSIC 14 search for γ from X^0 annihilation in the dwarf spheroidal galaxy Segue 1. The listed limit assumes annihilation into W^+W^-. See their Figs. 6, 7, and 16 for limits on $\sigma\cdot$v for annihilation channels $\mu^+\mu^-$, $\tau^+\tau^-$, $b\overline{b}$, $t\overline{t}$, $\gamma\gamma$, γZ, W^+W^-, ZZ for X^0 mass between 10^2 and 10^4 GeV. NODE=S030DMA;LINKAGE=F

[81] AARTSEN 13C search for neutrinos from X^0 annihilation in nearby galaxies and galaxy clusters. See their Figs. 5–7 for limits on $\sigma\cdot$v for $X^0X^0\rightarrow\nu\overline{\nu}$, $\mu^+\mu^-$, $\tau^+\tau^-$, and W^+W^- for X^0 mass between 300 GeV and 100 TeV. NODE=S030DMA;LINKAGE=A

[82] ABRAMOWSKI 13 search for monochromatic γ from X^0 annihilation in the Milky Way halo in the central region. Limit on $\sigma\cdot$v between 10^{-28} and 10^{-25} cm^3 s^{-1} (95% CL) is obtained for X^0 mass between 500 GeV and 20 TeV for $X^0X^0\rightarrow\gamma\gamma$. X^0 density distribution in the Galaxy by Einasto is assumed. See their Fig. 4. NODE=S030DMA;LINKAGE=B

[83] ACKERMANN 13A search for monochromatic γ from X^0 annihilation in the Milky Way. Limit on $\sigma\cdot$v for the process $X^0X^0\rightarrow\gamma\gamma$ in the range 10^{-29}–10^{-27} cm^3 s^{-1} (95% CL) is obtained for X^0 mass between 5 and 300 GeV. The limit depends slightly on the assumed density profile of X^0 in the Galaxy. See their Tables VII−X and Fig.10. Supersedes ACKERMANN 12. NODE=S030DMA;LINKAGE=C

[84] ABRAMOWSKI 12 search for γ's from X^0 annihilation in the Fornax galaxy cluster. See their Fig. 7 for limits on $\sigma\cdot$v for X^0 mass between 0.1 and 100 TeV for the annihilation channels $\tau^+\tau^-$, $b\overline{b}$, and W^+W^-. NODE=S030DMA;LINKAGE=D

[85] ACKERMANN 12 search for monochromatic γ from X^0 annihilation in the Milky Way. Limit on $\sigma\cdot$v in the range 10^{-28}–10^{-26} cm^3s^{-1} (95% CL) is obtained for X^0 mass between 7 and 200 GeV if X^0 annihilates into $\gamma\gamma$. The limit depends slightly on the assumed density profile of X^0 in the Galaxy. See their Table III and Fig. 15. NODE=S030DMA;LINKAGE=AK

[86] ACKERMANN 12 search for γ from X^0 annihilation in the Milky Way in the diffuse γ background. Limit on $\sigma\cdot$v of 10^{-24} cm^3s^{-1} or larger is obtained for X^0 mass between 5 GeV and 10 TeV for various annihilation channels including W^+W^-, $b\overline{b}$, gg, e^+e^-, $\mu^+\mu^-$, $\tau^+\tau^-$. The limit depends slightly on the assumed density profile of X^0 in the Galaxy. See their Figs. 17–20. NODE=S030DMA;LINKAGE=AE

[87] ALIU 12 search for γ's from X^0 annihilation in the dwarf spheroidal galaxy Segue 1. Limit on $\sigma\cdot$v in the range 10^{-24}–10^{-20} cm^3s^{-1} (95% CL) is obtained for X^0 mass between 10 GeV and 2 TeV for annihilation channels e^+e^-, $\mu^+\mu^-$, $\tau^+\tau^-$, $b\overline{b}$, and W^+W^-. See their Fig. 3. NODE=S030DMA;LINKAGE=E

[88] ABBASI 11C search for ν_μ from X^0 annihilation in the outer halo of the Milky Way. The limit assumes annihilation into $\nu\nu$. See their Fig. 9 for limits with other annihilation channels. NODE=S030DMA;LINKAGE=AB

[89] ABRAMOWSKI 11 search for γ from X^0 annihilation near the Galactic center. The limit assumes Einasto DM density profile. NODE=S030DMA;LINKAGE=AR

[90] ACKERMANN 11 search for γ from X^0 annihilation in ten dwarf spheroidal satellite galaxies of the Milky Way. The limit for $m = 10$ GeV assumes annihilation into $b\overline{b}$, the others W^+W^-. See their Fig. 2 for limits with other final states. See also GERINGER-SAMETH 11 for a different analysis of the same data. NODE=S030DMA;LINKAGE=AC

Dark Matter Particle (X^0) Production in Hadron Collisions

NODE=S030DMP

Searches for X^0 production in association with observable particles (γ, jets, ...) in high energy hadron collisions. If a specific form of effective interaction Lagrangian is assumed, the limits may be translated into limits on X^0-nucleon scattering cross section. NODE=S030DMP

NODE=S030DMP

• • • We do not use the following data for averages, fits, limits, etc. • • •

VALUE	DOCUMENT ID		TECN	COMMENT
	[1] AAD	24AC	ATLS	$t\overline{t}$ + mediator
	[2] AAD	24AC	ATLS	$t\overline{t}$ + mediator (OCCUR=2)
	[3] AAD	24AH	ATLS	SUSY pMSSM search
	[4] AAD	24AK	ATLS	t + MET search
	[5] AAD	24CD	ATLS	hadronic W/Z + MET search
	[6] HAYRAPETY...	24B	CMS	inelastic DM search
	[7] HAYRAPETY...	24W	CMS	dark matter/dark Higgs
	[8] AAD	23A	ATLS	$H \rightarrow$ invisible search
	[9] AAD	23AF	ATLS	$\overline{t}t + H \rightarrow$ invisible search
	[10] AAD	23AJ	ATLS	extended 2HDM search
	[11] AAD	23BX	ATLS	Ha, $a \rightarrow$ DM search
	[12] AAD	23W	ATLS	dark Higgs model
	[13] AKIMOV	23	COHR	LDM search at SNS
	[14] LIN	23C	KOTO	$\chi \rightarrow \gamma\gamma$ from K^0_L decay
	[15] AAD	22D	ATLS	Z+H with $H \rightarrow$ DM
	[16] AAD	22P	ATLS	$H \rightarrow \chi\chi$ search via VBF
	[17] AGUILAR-AR...	22A	CCM	p dump search for MeV-scale DM
	[18] TUMASYAN	22AA	CMS	$Z' \rightarrow$ DM search
	[19] TUMASYAN	22AG	CMS	strongly interacting DM search
	[20] TUMASYAN	22G	CMS	DM search via VBF to Higgs
	[21] AAD	21AZ	ATLS	DM search in $H \not\!\!E_T \rightarrow \gamma\gamma \not\!\!E_T$
	[22] AAD	21BB	ATLS	DM search in $H \not\!\!E_T \rightarrow b\overline{b} \not\!\!E_T$
	[23] AAD	21D	ATLS	Dark Higgs
	[24] AAD	21F	ATLS	jet + missing momentum
	[25] AAD	21K	ATLS	photon + DM
	[26] AAD	21O	ATLS	ℓ + jets + $\not\!\!E_T$ to search for t-pairs + DM
	[27] AAD	21P	ATLS	$\ell^+\ell^-$ + jets + $\not\!\!E_T$
	[28] AAD	21S	ATLS	b-jets + $\not\!\!E_T$
	[29] SIRUNYAN	21A	CMS	$pp \rightarrow Z\chi\chi$; $Z \rightarrow \ell\overline{\ell}$
	[30] TUMASYAN	21D	CMS	DM search in jets + $\not\!\!E_T$
	[31] SIRUNYAN	20X	CMS	$pp \rightarrow Z' \rightarrow A(Z')h \rightarrow h + \not\!\!E_T$
	[32] AABOUD	19AA	ATLS	multi-channel BSM search
	[33] AABOUD	19AI	ATLS	$H \rightarrow \chi\chi$
	[34] AABOUD	19AL	ATLS	$H \rightarrow \chi\chi$
	[35] AABOUD	19Q	ATLS	single t+$\not\!\!E_T$
	[36] AABOUD	19V	ATLS	review mediator based DM searches
	[37] BANERJEE	19	NA64	$eN \rightarrow eN$+$\not\!\!E$
	[38] SIRUNYAN	19AN	CMS	$H\chi\chi \rightarrow b\overline{b} \not\!\!E_T$
	[39] SIRUNYAN	19BC	CMS	LQ LQ $\rightarrow \mu j \not\!\!E_T$
	[40] SIRUNYAN	19BO	CMS	$VV \rightarrow Hqq$; $H \rightarrow$ DM
	[41] SIRUNYAN	19C	CMS	$pp \rightarrow t\overline{t}\chi\chi$
	[42] SIRUNYAN	19O	CMS	$pp \rightarrow \gamma \not\!\!E_T$
	[43] SIRUNYAN	19X	CMS	$pp \rightarrow t\overline{t} + \not\!p_T$; $pp \rightarrow t(\overline{t}) + \not\!p_T$
	[44] AABOUD	18	ATLS	$pp \rightarrow Z\chi\chi$; $Z \rightarrow \ell\ell$
	[45] AABOUD	18A	ATLS	$pp \rightarrow t\overline{t} \not\!\!E_T$; $pp \rightarrow b\overline{b} \not\!\!E_T$
	[46] AABOUD	18CA	ATLS	$pp \rightarrow V\chi\chi$; $V \rightarrow jj$
	[47] AABOUD	18I	ATLS	$pp \rightarrow$ jet(s) + $\not\!\!E_T$
	[48] AGUILAR-AR...	18B	MBNE	$pN \rightarrow \chi X$, $\chi = e$, π, or N
	[49] KHACHATRY...	18	CMS	$pp \rightarrow Z(\ell\ell) + \not\!\!E_T$
	[50] SIRUNYAN	18BF	CMS	$pp \rightarrow t \not\!\!E_T$
	[51] SIRUNYAN	18BO	CMS	dijet resonance search
	[52] SIRUNYAN	18BV	CMS	$pp \rightarrow Z \not\!\!E_T$
	[53] SIRUNYAN	18C	CMS	$pp \rightarrow t\overline{t} \not\!\!E_T$

54	SIRUNYAN	18CU	CMS	$pp \to Z \not\!\!E_T$	
55	SIRUNYAN	18DH	CMS	$pp \to \chi\chi h$; $h \to \gamma\gamma$ or $\tau\overline{\tau}$	
56	SIRUNYAN	18S	CMS	$pp \to$ jets $\not\!\!E_T$	
57	AABOUD	17A	ATLS	pp ($H \to b\overline{b}$ + WIMP pair)	
58	AABOUD	17AM	ATLS	$pp \to Z' \to Ah \to h(b\overline{b}) + \not\!\!E_T$	
59	AABOUD	17AQ	ATLS	$pp \to h(\gamma\gamma) + \not\!\!E_T$	
60	AABOUD	17BD	ATLS	$pp \to$ jet(s) $+ \not\!\!E_T$	
61	AABOUD	17R	ATLS	$pp \to \gamma \not\!\!E_T$	
62	AGUILAR-AR...	17A	MBNE	$pN \to \chi\chi X$; $\chi N \to \chi N$	
63	BANERJEE	17	NA64	$eN \to eN\gamma'$	
64	KHACHATRY...	17A	CMS	forward jets $+ \not\!\!E_T$	
65	KHACHATRY...	17F	CMS	$H \to$ invisibles	
66	SIRUNYAN	17	CMS	$Z + \not\!\!E_T$	
67	SIRUNYAN	17AP	CMS	$pp \to Z' \to Ah \to h + \not\!\!E_T$	
68	SIRUNYAN	17AQ	CMS	$pp \to \gamma + \not\!\!E_T$	
69	SIRUNYAN	17BB	CMS	$pp \to t\overline{t} + \not\!\!E_T$; $pp \to b\overline{b} + \not\!\!E_T$	
70	SIRUNYAN	17G	CMS	$pp \to j + \not\!\!E_T$	
71	SIRUNYAN	17U	CMS	$pp \to Z\chi\chi$; $Z \to \ell\overline{\ell}$	
72	AABOUD	16AD	ATLS	(W or $Z \to$ jets) $+ \not\!\!E_T$	
73	AAD	16AF	ATLS	$VV \to$ forward jets $+ \not\!\!E_T$	
74	AAD	16AG	ATLS	ℓ + jets	
75	AAD	16M	ATLS	$pp \to H + \not\!\!E_T$, $H \to b\overline{b}$	
76	KHACHATRY...	16BZ	CMS	jet(s) $+ \not\!\!E_T$	OCCUR=2
77	KHACHATRY...	16CA	CMS	jets $+ \not\!\!E_T$	
78	KHACHATRY...	16N	CMS	$pp \to \gamma + \not\!\!E_T$	
79	AAD	15AS	ATLS	b ($\overline{b}$) $+ \not\!\!E_T$, $t\overline{t} + \not\!\!E_T$	
80	AAD	15BH	ATLS	jet $+ \not\!\!E_T$	
81	AAD	15CF	ATLS	$H^0 + \not\!\!E_T$	
82	AAD	15CS	ATLS	$\gamma + \not\!\!E_T$	
83	KHACHATRY...	15AG	CMS	$t\overline{t} + \not\!\!E_T$	
84	KHACHATRY...	15AL	CMS	jet $+ \not\!\!E_T$	
85	KHACHATRY...	15T	CMS	$\ell + \not\!\!E_T$	
86	AAD	14AI	ATLS	$W + \not\!\!E_T$	
87	AAD	14BK	ATLS	W, $Z + \not\!\!E_T$	
88	AAD	14K	ATLS	$Z + \not\!\!E_T$	
89	AAD	14O	ATLS	$Z + \not\!\!E_T$	
90	AAD	13AD	ATLS	jet $+ \not\!\!E_T$	
91	AAD	13C	ATLS	$\gamma + \not\!\!E_T$	
92	AALTONEN	12K	CDF	$t + \not\!\!E_T$	
93	AALTONEN	12M	CDF	jet $+ \not\!\!E_T$	
94	CHATRCHYAN	12AP	CMS	jet $+ \not\!\!E_T$	
95	CHATRCHYAN	12T	CMS	$\gamma + \not\!\!E_T$	

[1] AAD 24AC search for $t\overline{t}$ + mediator, where mediator decays to dark matter, within 140 fb^{-1} of data. No signal observed. Limits placed in σ vs m(mediator) plane. NODE=S030DMP;LINKAGE=JC

[2] AAD 24AC search for $t\overline{t}$+MET signal at $\sqrt{s}$=13 TeV and 139 fb^{-1}. No signal observed. Assume DM mediator model coupling to $t\overline{t}$ and limits placed in various m(DM), m(mediator), coupling planes. NODE=S030DMP;LINKAGE=PC

[3] AAD 24AH search for SUSY in pMSSM model. No signal observed. Several regions of DM-allowed parameters space now ruled out. NODE=S030DMP;LINKAGE=KC

[4] AAD 24AK search for top + MET in various simplified models including mediator decaying to DM. No signal observed. Limits placed in various parameter space planes. NODE=S030DMP;LINKAGE=LC

[5] AAD 24CD search for hadronically-decaying W/Z plus MET events in 140 fb^{-1} at 13 TeV. No signal observed. Limits placed in m(χ) vs. mediator mass plane for simplified dark matter model. NODE=S030DMP;LINKAGE=QC

[6] HAYRAPETYAN 24B search for inelastic DM production where heavier state decays to displaced muons. No signal observed. Limits placed in signal strength vs mass plane for various choices of mass gap. NODE=S030DMP;LINKAGE=NC

[7] HAYRAPETYAN 24W search for dark matter via dark Higgs decay in WW + MET events. No signal observed. Limits placed in m(χ) vs m(mediator) or m(s) plane where s is dark Higgs. NODE=S030DMP;LINKAGE=OC

[8] AAD 23A search for $H \to$ invisible. No signal observed. Results interpreted in terms of several DM Higgs portal simplified models. NODE=S030DMP;LINKAGE=EC

[9] AAD 23AF search for $\overline{t}t + H \to$ invisible with 139 fb^{-1} of data. No signal observed. Limits placed on branching fractions of H decays etc. for various DM mediator models. Result also included in AAD 23A. NODE=S030DMP;LINKAGE=FC

[10] AAD 23AJ search for $tW\chi\chi$ production in mediator-extended 2HDM with 139 fb^{-1} of data. No signal observed. Limits placed in m(H) vs. m(mediator) and tan(β) vs. m(H) planes. NODE=S030DMP;LINKAGE=GC

[11] AAD 23BX search for $A \to Ha$ production where $H \to \tau\overline{\tau}$ and $a \to \chi\chi$. No signal observed. Limits placed on 2HDM+a model. NODE=S030DMP;LINKAGE=IC

[12] AAD 23W search for DM in dark Higgs model via $W W \chi \chi$ final state with 139 fb^{-1} of data. No signal detected. Limits set in m(dark Higgs) vs. m(Z') plane. NODE=S030DMP;LINKAGE=HC

[13] AKIMOV 23 search for light DM via COHERENT CsI detector at SNS. No signal observed. For scalar DM model, limits set for m(χ) = 1–300 MeV. Limit of $\sigma(\chi N)$ $< 1 \times 10^{1}$ pb set at peak sensitivity m(χ) = 25 MeV. NODE=S030DMP;LINKAGE=DC

[14] LIN 23C search for $\chi \rightarrow \gamma\gamma$ decay where $p \rightarrow \chi\chi$ at KOTO. No signal observed. Limits placed on K^0_L branching fraction. NODE=S030DMP;LINKAGE=BC

[15] AAD 22D search for Z+H production with $Z \rightarrow l\bar{l}$ and $H \rightarrow \chi\chi$ with 139 fb^{-1} at 13 TeV; no signal found; limits placed in various simplified models depending on Higgs portal and DM mediator. NODE=S030DMP;LINKAGE=VB

[16] AAD 22P search for H production via VBF with $H \rightarrow \chi\chi$ with 139 fb^{-1} at 13 TeV; no signal found; limits placed for various Higgs DM portal simplified models. NODE=S030DMP;LINKAGE=WB

[17] AGUILAR-AREVALO 22A report search for MeV vector portal and leptophobic DM via scatter on liquid Ar at the Lujan stopped pion source at LANL; no signal detected; limits placed on vector portal and leptophobic DM vs. m(χ): 1–40 MeV. NODE=S030DMP;LINKAGE=UB

[18] TUMASYAN 22AA search for Z' decay to dark quarks with 138 fb^{-1} at 13 TeV; no signal observed; limits exclude a wide range of strongly coupled hidden sector models. NODE=S030DMP;LINKAGE=XB

[19] TUMASYAN 22AG search for strongly interacting dark matter production via scalar mediator, with SIMP decay to trackless jets with 16.1 fb^{-1} at 13 TeV; no signal detected; limits placed in mass vs. cross section plane for simplified models. NODE=S030DMP;LINKAGE=YB

[20] TUMASYAN 22G search for VBF production of Higgs with $H \rightarrow \chi\chi$ with 101 fb^{-1} at 13 TeV, combined with earlier searches, in total 19.7 fb^{-1} at 8 TeV and 140 fb^{-1} at 13 TeV are used; no signal detected; limits placed in mass vs. cross section plane for various Higgs portal simplified models. NODE=S030DMP;LINKAGE=ZB

[21] AAD 21AZ search for DM in $H \not{E}_T \rightarrow \gamma\gamma \not{E}_T$ events with 139 fb^{-1} at 13 TeV. No signal observed. Limits placed for several simplified models. NODE=S030DMP;LINKAGE=RB

[22] AAD 21BB search for DM in $H \not{E}_T \rightarrow b\bar{b} \not{E}_T$ events with 139 fb^{-1} at 13 TeV. No signal observed. Limits placed for several simplified models. NODE=S030DMP;LINKAGE=SB

[23] AAD 21D search for $V V + \chi\chi$, $V \rightarrow q\bar{q}$ with 139 fb^{-1} at 13 TeV LHC. No signal detected. Limits placed in dark Higgs boson mass vs. m(Z') plane. Here $V V$ stand for $W^{\pm} W^{\mp}$, $Z Z$. NODE=S030DMP;LINKAGE=LB

[24] AAD 21F search for monojet recoiling against invisibles with 139 fb^{-1} at 13 TeV LHC. No signal detected. Limits placed in various simplified dark matter models. NODE=S030DMP;LINKAGE=MB

[25] AAD 21K search for a photon recoiling against dark matter with 139 fb^{-1} at 13 TeV LHC. No signal detected. Limits placed on parameter space of various simplified models. NODE=S030DMP;LINKAGE=NB

[26] AAD 21O search for ℓ + jets + $\not{E}_T$ to search for t-pairs + DM particles with 139 fb^{-1} at LHC 13 TeV LHC. No signal detected. Limits placed in the cross-section vs. mediator mass plane, assuming light DM states. NODE=S030DMP;LINKAGE=QB

[27] AAD 21P search for $\ell^{+}\ell^{-}$ + jets + $\not{E}_T$ in context of various BSM models with 139 fb^{-1} at 13 TeV LHC. No signal observed. Limits placed in parameter space of dark matter models and SUSY. NODE=S030DMP;LINKAGE=OB

[28] AAD 21S search for b-jets + $\not{E}_T$ signal from BSM/DM models with 139 fb^{-1} at 13 TeV LHC. No signal observed. Limits placed on parameter space of DM models. NODE=S030DMP;LINKAGE=PB

[29] SIRUNYAN 21A search for DM production in association with leptonically decaying Z boson in 137 fb^{-1} at 13 TeV; no signal; limits set in large variety of simplified DM models. NODE=S030DMP;LINKAGE=KB

[30] TUMASYAN 21D search for DM and other exotica at CMS in jets + $\not{E}_T$ events with 137 fb^{-1} at 13 TeV. No signal observed. Limits placed for a variety of simplified models. NODE=S030DMP;LINKAGE=TB

[31] SIRUNYAN 20X search for DM in $p p \rightarrow Z' \rightarrow A(Z') h \rightarrow h + \not{E}_T$ in CMS at 13 TeV with 35.9 fb^{-1}; no signal; limits placed in σ^{SI} vs. m(χ), and σ, m(A) and tanβ vs m(Z') for considered DM models. NODE=S030DMP;LINKAGE=JB

[32] AABOUD 19AA searches for BSM physics in more than 700 event classes with more than 10^5 regions at 13 TeV with 3.2 fb^{-1}; no significant signal. NODE=S030DMP;LINKAGE=DB

[33] AABOUD 19AI searches for vector boson fusion $p p \rightarrow H q q$, $H \rightarrow$ invisible at 13 TeV with 36.1 fb^{-1}; no signal: require B($H \rightarrow$ invisible) $<$ 0.37 (0.28 expected). NODE=S030DMP;LINKAGE=EB

[34] AABOUD 19AL perform search in three different channels for $H \rightarrow \chi\chi$ at 7, 8 and 13 TeV; combined result BF($H \rightarrow$ invisible) $<$ 0.26 (0.17 expected). NODE=S030DMP;LINKAGE=FB

[35] AABOUD 19Q search for single $t + \not{E}_T$ at 13 TeV with 36.1 fb^{-1} of data; no signal; limits set in σ or coupling vs. mass plane for simplified models. NODE=S030DMP;LINKAGE=GB

[36] AABOUD 19V review ATLAS results from 7, 8 and 13 TeV searches for mediator-based DM and DE scalar which couples to gravity; no signal: limits set for large variety of simplified models. NODE=S030DMP;LINKAGE=HB

[37] BANERJEE 19 search for dark photon via $e N \rightarrow e N + \not{E}$ in NA64; no signal, limits placed in kinetic mixing ϵ vs. m(DM) plane for m(DM) $\sim$ 0.001–1 GeV. NODE=S030DMP;LINKAGE=IB

[38] SIRUNYAN 19AN search at 13 TeV with 35.9 fb^{-1} for $p p \rightarrow H\chi\chi \rightarrow b\bar{b} \not{E}_T$; no signal: limits set in the context of a 2HDM + pseudoscalar (a) model and a baryonic Z' model. NODE=S030DMP;LINKAGE=VA

[39] SIRUNYAN 19BC search for DM via LeptoQuark pair annihilation LQ LQ $\rightarrow \mu j \chi\chi \rightarrow \mu j \not{E}_T$ with 77.4 fb^{-1}, 13 TeV; no signal: limits placed in m(χ) vs. m(LQ) plane. Model dependent limits on DM mass up to 600 GeV depending on m(LQ) placed. NODE=S030DMP;LINKAGE=ZA

[40] SIRUNYAN 19BO search for vector boson fusion $VV \rightarrow qqH$ with $H \rightarrow \chi\chi$ at 13 TeV with 38.2 fb^{-1}; no signal: limits placed for several models. Also search for $H \rightarrow$ invisible at 7, 8, and 13 TeV; no signal: limit placed on BF < 0.19. NODE=S030DMP;LINKAGE=AB

[41] SIRUNYAN 19C search for DM via $pp \rightarrow t\bar{t}\chi\chi$ at 13 TeV, 35.9 fb^{-1}; no signal; limits placed on coupling vs. mediator mass for various simplified models. NODE=S030DMP;LINKAGE=YA

[42] SIRUNYAN 19O search for $pp \rightarrow \gamma$ at 13 TeV with 35.9 fb^{-1}; no signal: limits placed on parameters of various models. NODE=S030DMP;LINKAGE=BB

[43] SIRUNYAN 19X search for $pp \rightarrow t\bar{t}\, \not{E}_T$ and $pp \rightarrow t\, \not{E}_T + ...$ at 13 TeV with 35.9 fb^{-1}; no signal: limits placed on χ production σ for various simplified models with m(χ) = 1 GeV. NODE=S030DMP;LINKAGE=CB

[44] AABOUD 18 search for $pp \rightarrow Z + \not{E}_T$ with $Z \rightarrow \ell\ell$ at 13 TeV with 36.1 fb^{-1} of data. Limits set for simplified models. NODE=S030DMP;LINKAGE=HA

[45] AABOUD 18A search for $pp \rightarrow t\bar{t}\, \not{E}_T$ or $pp \rightarrow b\bar{b}\, \not{E}_T$ at 13 TeV, 36.1 fb^{-1} of data. Limits set for simplified models. NODE=S030DMP;LINKAGE=FA

[46] AABOUD 18CA search for $pp \rightarrow V\chi\chi$ with $V \rightarrow jj$ at 13 TeV, 36.1 fb^{-1}. No signal observed. Limits set in m(DM) vs m(mediator) simplified model plane. NODE=S030DMP;LINKAGE=UA

[47] AABOUD 18I search for $pp \rightarrow j + \not{E}_T$ at 13 TeV with 36.1 fb^{-1} of data. Limits set for simplified models with pair-produced weakly interacting dark-matter candidates. NODE=S030DMP;LINKAGE=IA

[48] AGUILAR-AREVALO 18B search for WIMP production in MiniBooNE p beam dump; no signal; limits set for m(χ) $\sim$ 5–50 MeV in vector portal DM model. NODE=S030DMP;LINKAGE=WA

[49] KHACHATRYAN 18 search for $pp \rightarrow Z(\ell\ell) + \not{E}_T$. No signal observed. Llimits set on effective dark matter interactions and other exotic physics models. NODE=S030DMP;LINKAGE=OA

[50] SIRUNYAN 18BF search for $pp \rightarrow t\, \not{E}_T$ at 13 TeV and 36 fb^{-1}; no signal; limits placed on DM models involving a flavor changing neutral current, scalar resonance decaying to top quark and DM. NODE=S030DMP;LINKAGE=PA

[51] SIRUNYAN 18BO search for high mass dijet resonances at 13 TeV and 36 fb^{-1}; no signal: limits placed on various models, including simplified DM models involving a spin = 1 Z' mediator. NODE=S030DMP;LINKAGE=QA

[52] SIRUNYAN 18BV search for $pp \rightarrow Z\, \not{E}_T$ at 13 TeV; no signal, limits placed for various exotic physics models including DM. NODE=S030DMP;LINKAGE=RA

[53] SIRUNYAN 18C search for new physics in $pp \rightarrow$ final states with two oppositely charged leptons at 13 TeV with 35.9 fb^{-1}. Limits placed on m(mediator) and top squark for various simplified models. NODE=S030DMP;LINKAGE=NA

[54] SIRUNYAN 18CU search for $pp \rightarrow Z\, \not{E}_T$ at 13 TeV and 2.3 fb^{-1}. No signal observed. Limits placed for various exotic models including DM. NODE=S030DMP;LINKAGE=SA

[55] SIRUNYAN 18DH search for $pp \rightarrow \chi\chi h$; $h \rightarrow \gamma\gamma$ or $\tau\overline{\tau}$ at 13 TeV, 35.9 fb^{-1}; no signal; limits placed on massive boson mediator Z' in the context of Z'+2HDM and baryonic Z' models. Limits also cast in terms of spin-independent WIMP-nucleon cross section for masses 1–200 GeV. NODE=S030DMP;LINKAGE=XA

[56] SIRUNYAN 18S search for $pp \rightarrow$ jets $\not{E}_T$ at 13 TeV; no signal: limits placed on simplified dark matter models, on the branching ratio of the Higgs boson to invisible particles, and on several other exotic physics models including fermion portal DM. NODE=S030DMP;LINKAGE=TA

[57] AABOUD 17A search for $H \rightarrow b\overline{b} + \not{E}_T$. See Fig. 4b for limits set on VB mediator vs WIMP mass. NODE=S030DMP;LINKAGE=Q

[58] AABOUD 17AM search for $pp \rightarrow Z' \rightarrow Ah \rightarrow h(b\overline{b}) + \not{E}_T$ at 13 TeV. Limits set in m(Z') vs. m(A) plane and on the visible cross section of $h(b\overline{b}) + \not{E}_T$ events in bins of $\not{E}_T$. NODE=S030DMP;LINKAGE=S

[59] AABOUD 17AQ search for WIMP in $pp \rightarrow h(\gamma\gamma) + \not{E}_T$ in 36.1 fb^{-1} of data. Limits on the visible cross section are also provided. Model dependent limits on spin independent DM - Nucleon cross-section are also presented, which are more stringent than those from direct searches for DM mass smaller than 2.5 GeV. NODE=S030DMP;LINKAGE=DA

[60] AABOUD 17BD search for $pp \rightarrow$ jet(s) $+ \not{E}_T$ at 13 TeV with 3.2 fb^{-1} of data. Limits set for simplified models. Observables corrected for detector effects can be used to constrain other models. NODE=S030DMP;LINKAGE=EA

[61] AABOUD 17R, for an axial vector mediator in the s-channel, excludes m(mediator) $<$ 750–1200 GeV for m(DM) $<$ 230–480 GeV, depending on the couplings. NODE=S030DMP;LINKAGE=W

[62] AGUILAR-AREVALO 17A search for DM produced in 8 GeV proton collisions with steel beam dump followed by DM-nucleon scattering in MiniBooNE detector. Limit placed on DM cross section parameter $Y < 2 \times 10^{-8}$ for $\alpha_D = 0.5$ and for $0.01 < m(\mathrm{DM}) <$ 0.3 GeV. NODE=S030DMP;LINKAGE=X

[63] BANERJEE 17 search for dark photon invisible decay via eN scattering; exclude m(γ') $<$ 100 MeV as an explanation of $(g_\mu-2)$ muon anomaly. NODE=S030DMP;LINKAGE=Y

[64] KHACHATRYAN 17A search for WIMPs in forward jets $+ \not{E}_T$ channel with 18.5 fb^{-1} at 8 TeV; limits set in effective theory model, Fig. 3. NODE=S030DMP;LINKAGE=V

[65] KHACHATRYAN 17F search for $H \rightarrow$ invisibles in pp collisions at 7, 8, and 13 TeV; place limits on Higgs portal DM. NODE=S030DMP;LINKAGE=AA

[66] SIRUNYAN 17 search for $pp \rightarrow Z + \not{E}_T$ with 2.3 fb^{-1} at 13 TeV; no signal seen; limits placed on WIMPs and unparticles. NODE=S030DMP;LINKAGE=BA

[67] SIRUNYAN 17AP search for $pp \rightarrow Z' \rightarrow Ah \rightarrow h + \not{E}_T$ with $h \rightarrow b\overline{b}$ or $\gamma\gamma$ and $A \rightarrow \chi\chi$ with 2.3 fb^{-1} at 13 TeV. Limits set in m(Z') vs. m(A) plane. NODE=S030DMP;LINKAGE=JA

[68] SIRUNYAN 17AQ search for $pp \rightarrow \gamma + \not{E}_T$ at 13 TeV with 12.9 fb^{-1}. Limits derived for simplified DM models, effective electroweak-DM interaction and Extra Dimensions models. NODE=S030DMP;LINKAGE=KA

69 SIRUNYAN 17BB search for WIMPs via $pp \to t\bar{t} + \not{E}_T$, $pp \to b\bar{b} + \not{E}_T$ at 13 TeV with 2.2 fb^{-1}. Limits derived for various simplified models. NODE=S030DMP;LINKAGE=LA

70 SIRUNYAN 17G search for $pp \to j + \not{E}_T$ with 12.9 fb^{-1} at 13 TeV; limits placed on WIMP mass/mediators in DM simplified models. NODE=S030DMP;LINKAGE=CA

71 SIRUNYAN 17U search for WIMPs/unparticles via $pp \to Z\chi\chi$, $Z \to \ell\bar{\ell}$ at 13 TeV with 2.3 fb^{-1}. Limits derived for various simplified models. NODE=S030DMP;LINKAGE=MA

72 AABOUD 16AD place limits on $VVXX$ effective theory via search for hadronic W or Z plus WIMP pair production. See Fig. 5. NODE=S030DMP;LINKAGE=P

73 AAD 16AF search for $VV \to (H \to$ WIMP pair) + forward jets with 20.3 fb^{-1} at 8 TeV; set limits in Higgs portal model, Fig. 8. NODE=S030DMP;LINKAGE=R

74 AAD 16AG search for lepton jets with 20.3 fb^{-1} of data at 8 TeV; Fig. 13 excludes dark photons around 0.1–1 GeV for kinetic mixing 10^{-6}–10^{-2}. NODE=S030DMP;LINKAGE=M

75 AAD 16M search with 20.3 fb^{-1} of data at 8 TeV pp collisions; limits placed on EFT model (Fig. 7) and simplified Z' model (Fig. 6). NODE=S030DMP;LINKAGE=N

76 KHACHATRYAN 16BZ search for jet(s) + $\not{E}_T$ in 19.7 fb^{-1} at 8 TeV; limits set for variety of simplified models. NODE=S030DMP;LINKAGE=T

77 KHACHATRYAN 16CA search for WIMPs via jet(s) + $\not{E}_T$ using razor variable; require mediator scale > 1 TeV for various effective theories. NODE=S030DMP;LINKAGE=U

78 KHACHATRYAN 16N search for γ + WIMPs in 19.6 fb^{-1} at 8 TeV; limits set on SI and SD WIMP-p scattering in Fig. 3. NODE=S030DMP;LINKAGE=O

79 AAD 15AS search for events with one or more bottom quark and missing E_T, and also events with a top quark pair and missing E_T in pp collisions at E_{cm} = 8 TeV with L = 20.3 fb^{-1}. See their Figs. 5 and 6 for translated limits on X^0-nucleon cross section for m = 1–700 GeV. NODE=S030DMP;LINKAGE=J

80 AAD 15BH search for events with a jet and missing E_T in pp collisions at E_{cm} = 8 TeV with L = 20.3 fb^{-1}. See their Fig. 12 for translated limits on X^0-nucleon cross section for m = 1–1200 GeV. NODE=S030DMP;LINKAGE=F

81 AAD 15CF search for events with a H^0 ($\to \gamma\gamma$) and missing E_T in pp collisions at E_{cm} = 8 TeV with L = 20.3 fb^{-1}. See paper for limits on the strength of some contact interactions containing X^0 and the Higgs fields. NODE=S030DMP;LINKAGE=K

82 AAD 15CS search for events with a photon and missing E_T in pp collisions at E_{cm} = 8 TeV with L = 20.3 fb^{-1}. See their Fig. 13 (see also erratum) for translated limits on X^0-nucleon cross section for m = 1–1000 GeV. NODE=S030DMP;LINKAGE=G

83 KHACHATRYAN 15AG search for events with a top quark pair and missing E_T in pp collisions at E_{cm} = 8 TeV with L = 19.7 fb^{-1}. See their Fig. 8 for translated limits on X^0-nucleon cross section for m = 1–200 GeV. NODE=S030DMP;LINKAGE=I

84 KHACHATRYAN 15AL search for events with a jet and missing E_T in pp collisions at E_{cm} = 8 TeV with L = 19.7 fb^{-1}. See their Fig. 5 and Tables 4–6 for translated limits on X^0-nucleon cross section for m = 1–1000 GeV. NODE=S030DMP;LINKAGE=E

85 KHACHATRYAN 15T search for events with a lepton and missing E_T in pp collisions at E_{cm} = 8 TeV with L = 19.7 fb^{-1}. See their Fig. 17 for translated limits on X^0-proton cross section for m = 1–1000 GeV. NODE=S030DMP;LINKAGE=H

86 AAD 14AI search for events with a W and missing E_T in pp collisions at E_{cm} = 8 TeV with L = 20.3 fb^{-1}. See their Fig. 4 for translated limits on X^0–nucleon cross section for m = 1–1500 GeV. NODE=S030DMP;LINKAGE=C

87 AAD 14BK search for hadronically decaying W, Z in association with $\not{E}_T$ in 20.3 fb^{-1} at 8 TeV pp collisions. Fig. 5 presents exclusion results for SI and SD scattering cross section. In addition, cross section limits on the anomalous production of W or Z bosons with large missing transverse momentum are also set in two fiducial regions. NODE=S030DMP;LINKAGE=L

88 AAD 14K search for events with a Z and missing E_T in pp collisions at E_{cm} = 8 TeV with L = 20.3 fb^{-1}. See their Fig. 5 and 6 for translated limits on X^0–nucleon cross section for m = 1–10^3 GeV. NODE=S030DMP;LINKAGE=B

89 AAD 14O search for ZH^0 production with H^0 decaying to invisible final states. See their Fig. 4 for translated limits on X^0–nucleon cross section for m = 1–60 GeV in Higgs-portal X^0 scenario. NODE=S030DMP;LINKAGE=D

90 AAD 13AD search for events with a jet and missing E_T in pp collisions at E_{cm} = 7 TeV with L = 4.7 fb^{-1}. See their Figs. 5 and 6 for translated limits on X^0-nucleon cross section for m = 1–1300 GeV. NODE=S030DMP;LINKAGE=A

91 AAD 13C search for events with a photon and missing E_T in pp collisions at E_{cm} = 7 TeV with L = 4.6 fb^{-1}. See their Fig. 3 for translated limits on X^0-nucleon cross section for m = 1–1000 GeV. NODE=S030DMP;LINKAGE=GA

92 AALTONEN 12K search for events with a top quark and missing E_T in $p\bar{p}$ collisions at E_{cm} = 1.96 TeV with L = 7.7 fb^{-1}. Upper limits on $\sigma(tX^0)$ in the range 0.4–2 pb (95% CL) is given for m_{X^0} = 0–150 GeV. NODE=S030DMP;LINKAGE=AL

93 AALTONEN 12M search for events with a jet and missing E_T in $p\bar{p}$ collisions at E_{cm} = 1.96 TeV with L = 6.7 fb^{-1}. Upper limits on the cross section in the range 2–10 pb (90% CL) is given for m_{X^0} = 1–300 GeV. See their Fig. 2 for translated limits on X^0-nucleon cross section. NODE=S030DMP;LINKAGE=AN

[94] CHATRCHYAN 12AP search for events with a jet and missing E_T in pp collisions at $E_{\rm cm}$ = 7 TeV with L = 5.0 fb^{-1}. See their Fig. 4 for translated limits on X^0-nucleon cross section for m_{X^0} = 0.1–1000 GeV. NODE=S030DMP;LINKAGE=CC

[95] CHATRCHYAN 12T search for events with a photon and missing E_T in pp collisions at $E_{\rm cm}$ = 7 TeV with L = 5.0 fb^{-1}. Upper limits on the cross section in the range 13–15 fb (90% CL) is given for m_{X^0} = 1–1000 GeV. See their Fig. 2 for translated limits on X^0-nucleon cross section. NODE=S030DMP;LINKAGE=CR

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AAD	23AF	EPJ C83 503	G. Aad *et al.*	(ATLAS Collab.)	REFID=62171
AAD	23AJ	EPJ C83 603	G. Aad *et al.*	(ATLAS Collab.)	REFID=62178
AAD	23BX	JHEP 2309 189	G. Aad *et al.*	(ATLAS Collab.)	REFID=62532
AAD	23W	JHEP 2307 116	G. Aad *et al.*	(ATLAS Collab.)	REFID=62148
AALBERS	23	PRL 131 041002	J. Aalbers *et al.*	(LZ Collab.)	REFID=62236
AALBERS	23A	PR D108 072006	J. Aalbers *et al.*	(LZ Collab.)	REFID=62491
ABBASI	23A	PR D108 102004	R. Abbasi *et al.*	(IceCube Collab.)	REFID=62506
ABBASI	23B	JCAP 2310 003	R. Abbasi *et al.*	(IceCube Collab.)	REFID=62562
ABE	23A	PRL 130 031802	K. Abe *et al.*	(Super-Kamiokande Collab.)	REFID=62196
Also		PRL 131 159903 (errat.)	K. Abe *et al.*	(Super-Kamiokande Collab.)	REFID=62582
ABE	23B	PRL 130 061002	H. Abe *et al.*	(MAGIC Collab.)	REFID=62201
ABE	23E	PR D108 083022	K. Abe *et al.*	(XMASS-I Collab.)	REFID=62498
ABE	23G	PRL 131 159903 (errat.)	K. Abe *et al.*	(Super-Kamiokande Collab.)	REFID=62582
ABREU	23	PRL 130 061001	P. Abreu *et al.*	(Pierre Auger Collab.)	REFID=62200
ACEVEDO	23	JCAP 2311 085	J.F. Acevedo, J. Bramante, A. Goodman	(QUKI+)	REFID=62565
ADAMS	23	PR D108 062003	E. Adams *et al.*	(PICO Collab.)	REFID=62482
ADHIKARI	23B	PRL 131 201802	G. Adhikari *et al.*	(COSINE-100 Collab.)	REFID=62466
ADHIKARI	23C	PR D108 092006	G. Adhikari *et al.*	(COSINE-100 Collab.)	REFID=62500
AGNES	23	PRL 130 101001	P. Agnes *et al.*	(DarkSide-50 Collab.)	REFID=62211
AGNES	23A	PRL 130 101002	P. Agnes *et al.*	(DarkSide-50 Collab.)	REFID=62212
AGNES	23B	PR D107 063001	P. Agnes *et al.*	(DarkSide-50 Collab.)	REFID=62261
AKIMOV	23	PRL 130 051803	D. Akimov *et al.*	(COHERENT Collab.)	REFID=62198
ALBAKRY	23	PR D107 112013	M.F. Albakry *et al.*	(SuperCDMS Collab.)	REFID=62282
ALBERT	23	JCAP 2312 038	A. Albert *et al.*	(HAWC Collab.)	REFID=62566
AL-KHARUSI	23	PR D107 012007	S. Al Kharusi *et al.*	(EXO-200 Collab.)	REFID=62242
AMBROSONE	23	PRL 131 111003	A. Ambrosone *et al.*		REFID=62579
ANGLOHER	23	PR D107 122003	G. Angloher *et al.*	(CRESST-III Collab.)	REFID=62284
APRILE	23	PRL 130 261002	E. Aprile *et al.*	(XENON1T Collab.)	REFID=62226
APRILE	23A	PRL 131 041003	E. Aprile *et al.*	(XENONnT Collab.)	REFID=62237
ARNQUIST	23A	PRL 130 171003	I.J. Arnquist *et al.*	(DAMIC Collab.)	REFID=62216
CHENG	23A	PR D108 063015	J.-G. Cheng, Y.-F. Liang, E.-W. Liang		REFID=62593
FOSTER	23	PR D107 103047	J.W. Foster *et al.*	(MIT, UCB, LBL+)	REFID=62332
GUO	23	PR D107 103011	W.-Q. Guo *et al.*		REFID=62274
GUO	23A	PR D108 043001	X.-K. Guo *et al.*		REFID=62359
HUANG	23	PRL 131 191002	D. Huang *et al.*	(PandaX-4T Collab.)	REFID=62462
LAVIS	23	PR D108 123536	N. Lavis *et al.*	(WITW, RHODE)	REFID=62596
LI	23F	PRL 130 261001	S. Li *et al.*	(PandaX-4T Collab.)	REFID=62225
LIN	23C	PRL 130 111801	C. Lin *et al.*	(KOTO Collab.)	REFID=62214
MA	23A	PRL 130 021802	W. Ma *et al.*	(PandaX-4T Collab.)	REFID=62195
NING	23A	PRL 131 041001	X. Ning *et al.*	(PandaX-4T Collab.)	REFID=62235
SHIMADA	23	PTEP 2023 103F01	T. Shimada *et al.*	(NEWAGE Collab.)	REFID=62567
AAD	22D	PL B829 137066	G. Aad *et al.*	(ATLAS Collab.)	REFID=61705
AAD	22P	JHEP 2208 104	G. Aad *et al.*	(ATLAS Collab.)	REFID=61818
ABBASI	22B	PR D105 062004	R. Abbasi *et al.*	(IceCube Collab.)	REFID=61731
ABDALLA	22	PRL 129 111101	H. Abdalla *et al.*	(H.E.S.S. Collab.)	REFID=61913
ADHIKARI	22	PRL 128 011801	P. Adhikari *et al.*	(DEAP Collab.)	REFID=61510
ADHIKARI	22B	PR D105 042006	G. Adhikari *et al.*	(COSINE-100 Collab.)	REFID=61723
ADHIKARI	22D	PR D106 052005	G. Adhikari *et al.*	(COSINE-100 Collab.)	REFID=61941
AGOSTINI	22	JCAP 2212 012	M. Agostini *et al.*	(GERDA Collab.)	REFID=61978
AGOSTINI	22A	PRL 129 089901	M. Agostini *et al.*	(GERDA Collab.)	REFID=61986
AGUILAR-AR...	22A	PR D106 012001	A.A. Aguilar-Arevalo *et al.*	(CCM Collab.)	REFID=61755
AKIMOV	22	PR D106 052004	D. Akimov *et al.*	(COHERENT Collab.)	REFID=61940
ALBERT	22A	JCAP 2206 028	A. Albert *et al.*	(ANTARES Collab.)	REFID=61857
ANGLOHER	22	EPJ C82 207	G. Angloher *et al.*	(CRESST Collab.)	REFID=61826
ANGLOHER	22A	PR D106 092008	G. Angloher *et al.*	(CRESST-III Collab.)	REFID=61958
APRILE	22	PR D106 022001	E. Aprile *et al.*	(XENON1T Collab.)	REFID=61760
Also		PR D110 109903 (errat.)	E. Aprile *et al.*	(XENON1T Collab.)	REFID=63101
ARMENGAUD	22	PR D106 062004	E. Armengaud *et al.*	(EDELWEISS Collab.)	REFID=61944
BATTAGLIERI	22	PR D106 072011	M. Battaglieri *et al.*	(BDX-MINI Collab.)	REFID=61947

BOSE	22	PR D105 123013	D. Bose, T.N. Maity, T.S. Ray		REFID=61754
CHAN	22	PR D105 123006	M.H. Chan, C.M. Lee		REFID=61753
CUI	22	PRL 128 171801	X. Cui *et al.*	(PandaX-II Collab.)	REFID=61676
DAI	22A	PRL 129 221802	W.H. Dai *et al.*	(CDEX Collab.)	REFID=61927
EGOROV	22	PR D106 023023	A.E. Egorov	(LEBD)	REFID=61762
GHOSH	22	PR D105 103029	D. Ghosh, A. Guha, D. Sachdeva		REFID=61747
GU	22	PRL 129 161803	L. Gu *et al.*	(PandaX-4T Collab.)	REFID=61918
HOCHBERG	22	PR D106 112005	Y. Hochberg *et al.*	(SNSPD Collab.)	REFID=61963
HUANG	22	PL B834 137487	Z. Huang *et al.*	(PandaX-4T Collab.)	REFID=61935
MANCONI	22	PRL 129 111103	S. Manconi, A. Cuoco, J. Lesgourgues		REFID=61914
TUMASYAN	22AA	JHEP 2206 156	A. Tumasyan *et al.*	(CMS Collab.)	REFID=61807
TUMASYAN	22AG	EPJ C82 213	A. Tumasyan *et al.*	(CMS Collab.)	REFID=61827
TUMASYAN	22G	PR D105 092007	A. Tumasyan *et al.*	(CMS Collab.)	REFID=61742
XU	22	PR D106 052008	R. Xu *et al.*	(CDEX Collab.)	REFID=61943
ZHANG	22	PRL 129 161804	D. Zhang *et al.*	(PandaX-4T Collab.)	REFID=61919
ZHANG	22A	PRL 129 221301	Z.Y. Zhang *et al.*	(CDEX Collab.)	REFID=61926
AAD	21AZ	JHEP 2110 013	G. Aad *et al.*	(ATLAS Collab.)	REFID=61556
AAD	21BB	JHEP 2111 209	G. Aad *et al.*	(ATLAS Collab.)	REFID=61558
AAD	21D	PRL 126 121802	G. Aad *et al.*	(ATLAS Collab.)	REFID=61173
AAD	21F	PR D103 112006	G. Aad *et al.*	(ATLAS Collab.)	REFID=61247
AAD	21K	JHEP 2102 226	G. Aad *et al.*	(ATLAS Collab.)	REFID=61279
AAD	21O	JHEP 2104 174	G. Aad *et al.*	(ATLAS Collab.)	REFID=61293
AAD	21P	JHEP 2104 165	G. Aad *et al.*	(ATLAS Collab.)	REFID=61295
AAD	21S	JHEP 2105 093	G. Aad *et al.*	(ATLAS Collab.)	REFID=61304
ABDALLAH	21	PR D103 102002	H. Abdallah *et al.*	(H.E.S.S. Collab.)	REFID=61240
AKERIB	21A	PR D104 012011	D.S. Akerib *et al.*	(LUX Collab.)	REFID=61364
AKERIB	21B	PR D104 062005	D.S. Akerib *et al.*	(LUX Collab.)	REFID=61520
ALKHATIB	21	PRL 127 061801	I. Alkhatib *et al.*	(SuperCDMS Collab.)	REFID=61351
AMARE	21	PR D103 102005	J. Amare *et al.*	(ANAIS Collab.)	REFID=61242
ANDRIAMIR...	21A	PR D104 012009	M. Andriamirado *et al.*	(PROSPECT Collab.)	REFID=61362
APRILE	21	PRL 126 091301	E. Aprile *et al.*	(XENON1T Collab.)	REFID=61168
APRILE	21A	PR D103 063028	E. Aprile *et al.*	(XENON1T Collab.)	REFID=61228
CHENG	21	PRL 126 211803	C. Cheng *et al.*	(PandaX-II Collab.)	REFID=61187
CIRELLI	21	PR D103 063022	M. Cirelli *et al.*		REFID=61227
IKEDA	21	PTEP 2021 063F01	T. Ikeda *et al.*	(NEWAGE Collab.)	REFID=61264
JOHN	21	JCAP 2112 007	I. John, T. Linden	(STOH)	REFID=61581
MENG	21B	PRL 127 261802	Y. Meng *et al.*	(PandaX-4T Collab.)	REFID=61506
SIRUNYAN	21A	EPJ C81 13	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=60775
Also		EPJ C81 333 (errat.)	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=61322
TUMASYAN	21D	JHEP 2111 153	A. Tumasyan *et al.*	(CMS Collab.)	REFID=61559
WANG	21K	SCPMA 64 281011	Y. Wang *et al.*	(CDEX Collab.)	REFID=62005
AARTSEN	20C	EPJ C80 819	M.G. Aartsen *et al.*	(IceCube, PICO Collabs)	REFID=60632
ABAZAJIAN	20	PR D102 043012	K.N. Abazajian *et al.*	(UCI, VPI, TOKY+)	REFID=60360
ABDALLAH	20	PR D102 062001	H. Abdallah *et al.*	(H.E.S.S. Collab.)	REFID=60721
ABDELHAME...	20A	EPJ C80 834	A.H. Abdelhameed *et al.*	(CRESST Collab.)	REFID=60911
ABE	20G	PR D102 072002	K. Abe *et al.*	(Super-Kamiokande Collab.)	REFID=60727
ADHIKARI	20	PR D102 082001	P. Adhikari *et al.*	(DEAP-3600 Collab.)	REFID=60729
AGOSTINI	20	PRL 125 011801	M. Agostini *et al.*	(GERDA Collab.)	REFID=60571
AGUILAR-AR...	20C	PRL 125 241803	A. Aguilar-Arevalo	(DAMIC Collab.)	REFID=60701
AKERIB	20	PR D101 012003	D.S. Akerib *et al.*	(LUX Collab.)	REFID=60047
AKERIB	20A	PR D101 042001	D.S. Akerib *et al.*	(LUX Collab.)	REFID=60265
ALBERT	20	PR D101 103001	A. Albert *et al.*	(HAWC Collab.)	REFID=60362
ALBERT	20A	PL B805 135439	A. Albert *et al.*	(ANTARES Collab.)	REFID=60400
ALBERT	20C	PR D102 082002	A. Albert *et al.*	(ANTARES and IceCube Collab.)	REFID=60730
ALVAREZ	20	JCAP 2009 004	A. Alvarez *et al.*		REFID=60637
AMARAL	20	PR D102 091101	D.W. Amaral *et al.*	(SuperCDMS Collab.)	REFID=60731
ANDRIANAV...	20	PR D102 042001	A. Andrianavalomahefa *et al.*	(FUNK Collab.)	REFID=60359
APRILE	20	PR D102 072004	E. Aprile *et al.*	(XENON Collab.)	REFID=60728
ARNAUD	20	PRL 125 141301	Q. Arnaud *et al.*	(EDELWEISS Collab.)	REFID=60685
BARAK	20	PRL 125 171802	L. Barak *et al.*	(SENSEI Collab.)	REFID=60691
CLARK	20	PR D102 123026	M. Clark *et al.*	(PURD)	REFID=60751
Also		PR D104 129903 (errat.)	M. Clark *et al.*		REFID=61592
FELIZARDO	20	IJMP A35 2030005	M. Felizardo	(SIMPLE Collab.)	REFID=60604
HOOF	20	JCAP 2002 012	S. Hoof, A. Geringer-Sameth, R. Trotta	(GOET+)	REFID=60365
MAZZIOTTA	20	PR D102 022003	M.N. Mazziotta *et al.*		REFID=60616
SIRUNYAN	20X	JHEP 2003 025	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=60473
WANG	20G	CP C44 125001	Q. Wang *et al.*	(PandaX-II Collab.)	REFID=61260
AABOUD	19AA	EPJ C79 120	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=59705
AABOUD	19AI	PL B793 499	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=59755
AABOUD	19AL	PRL 122 231801	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=59792
AABOUD	19Q	JHEP 1905 041	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=59680
AABOUD	19V	JHEP 1905 142	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=59686
ABDELHAME...	19	EPJ C79 630	A.H. Abdelhameed *et al.*	(CRESST Collab.)	REFID=59962
ABDELHAME...	19A	PR D100 102002	A.H. Abdelhameed *et al.*	(CRESST Collab.)	REFID=60030
ABE	19	PL B789 45	K. Abe *et al.*	(XMASS Collab.)	REFID=59423
ABEYSEKARA	19	JCAP 1907 022	A.U. Abeysekara *et al.*	(HAWC Collab.)	REFID=60182
ABRAMOFF	19	PRL 122 161801	O. Abramoff *et al.*	(SENSEI Collab.)	REFID=59777
ADHIKARI	19	PRL 123 031302	G. Adhikari *et al.*	(COSINE-100 Collab.)	REFID=59801
AGNESE	19A	PR D99 062001	R. Agnese *et al.*	(CDMS Collab.)	REFID=59944
AGUILAR-AR...	19A	PRL 123 181802	A. Aguilar-Arevalo *et al.*	(DAMIC Collab.)	REFID=60066
AJAJ	19	PR D100 022004	R. Ajaj *et al.*	(DEAP-3600 Collab.)	REFID=59954
AKERIB	19	PRL 122 131301	D.S. Akerib *et al.*	(LUX Collab.)	REFID=59769
ALBERT	19B	JCAP 1904 E01	A. Albert *et al.*	(HAWC Collab.)	REFID=60174
AMARE	19	PRL 123 031301	J. Amare *et al.*	(ANAIS Collab.)	REFID=59800
AMOLE	19	PR D100 022001	C. Amole *et al.*	(PICO Collab.)	REFID=59953
ANGLOHER	19	EPJ C79 43	G. Angloher *et al.*	(CRESST-II Collab.)	REFID=59623
APRILE	19	PRL 122 071301	E. Aprile *et al.*	(XENON1T Collab.)	REFID=59760
APRILE	19A	PRL 122 141301	E. Aprile *et al.*	(XENON1T Collab.)	REFID=59772
APRILE	19C	PRL 123 241803	E. Aprile *et al.*	(XENON1T Collab.)	REFID=60077
APRILE	19D	PRL 123 251801	E. Aprile *et al.*	(XENON1T Collab.)	REFID=60078
ARMENGAUD	19	PR D99 082003	E. Armengaud *et al.*	(EDELWEISS Collab.)	REFID=59866
BANERJEE	19	PRL 123 121801	D. Banerjee *et al.*	(NA64 Collab.)	REFID=60056
BRINGMANN	19	PRL 122 171801	T. Bringmann, M. Pospelov	(OSLO, VICT)	REFID=59779
BRUNE	19	PR D99 096005	T. Brune, H. Pas	(DORT)	REFID=59882
CHEUNG	19	PL B789 137	K. Cheung *et al.*		REFID=59424
CHOI	19	PR D99 083018	K.-Y. Choi, J. Kim, C. Rott	(SUNG)	REFID=59868
DI-MAURO	19	PR D99 123027	M. Di Mauro *et al.*		REFID=59949
HA	19	PRL 122 131802	C. Ha *et al.*	(COSINE-100 Collab.)	REFID=59770
JOHNSON	19	PR D99 103007	C. Johnson *et al.*		REFID=59946

KIM	19A	JHEP 1903 194	K.W. Kim *et al.*	(KIMS Collab.)	REFID=59665
KLOPF	19	PRL 122 222503	M. Klopf *et al.*	(PERKEO II Collab.)	REFID=59790
KOBAYASHI	19	PL B795 308	M. Kobayashi *et al.*	(XMASS Collab.)	REFID=59758
LI	19D	PR D99 123519	S. Li *et al.*		REFID=59951
LIU	19B	PRL 123 161301	Z.Z. Liu *et al.*	(CDEX Collab.)	REFID=60063
NG	19	PR D99 083005	K.C.Y. Ng *et al.*		REFID=59867
QUEIROZ	19	JCAP 1904 048	F.S. Queiroz, C. Siqueira		REFID=59969
SEONG	19	PRL 122 011801	I.S. Seong *et al.*	(BELLE Collab.)	REFID=59546
SIRUNYAN	19AN	EPJ C79 280	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=59716
SIRUNYAN	19BC	PL B795 76	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=59757
SIRUNYAN	19BO	PL B793 520	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=59927
SIRUNYAN	19C	PRL 122 011803	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=59548
SIRUNYAN	19O	JHEP 1902 074	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=59649
SIRUNYAN	19X	JHEP 1903 141	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=59662
SUZUKI	19	ASP 110 1	T. Suzuki *et al.*	(XMASS Collab.)	REFID=59975
XIA	19A	PL B792 193	J. Xia *et al.*	(PandaX-II Collab.)	REFID=59926
YAGUNA	19	JCAP 1904 041	C. Yaguna		REFID=59970
YANG	19	PRL 123 221301	L.T. Yang *et al.*	(CDEX Collab.)	REFID=60070
AABOUD	18	PL B776 318	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=58621
AABOUD	18A	EPJ C78 18	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=58478
AABOUD	18CA	JHEP 1810 180	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=59356
AABOUD	18I	JHEP 1801 126	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=58792
AARTSEN	18D	EPJ C78 831	M.G. Aartsen *et al.*	(IceCube Collab.)	REFID=59321
ABDALLAH	18	PRL 120 201101	H. Abdallah *et al.*	(H.E.S.S. Collab.)	REFID=58824
ABE	18C	PR D97 102006	K. Abe *et al.*	(XMASS Collab.)	REFID=58944
ABE	18F	PL B787 153	K. Abe *et al.*	(XMASS Collab.)	REFID=59410
ADHIKARI	18	NAT 564 83	G. Adhikari *et al.*	(COSINE-100 Collab.)	REFID=59583
AGNES	18	PRL 121 081307	P. Agnes *et al.*	(DarkSide-50 Collab.)	REFID=58865
AGNES	18A	PR D98 102006	P. Agnes *et al.*	(DarkSide-50 Collab.)	REFID=59489
AGNES	18B	PRL 121 111303	P. Agnes *et al.*	(DarkSide-50 Collab.)	REFID=59519
AGNESE	18	PR D97 022002	R. Agnese *et al.*	(SuperCDMS Collab.)	REFID=58720
AGNESE	18A	PRL 120 061802	R. Agnese *et al.*	(SuperCDMS Collab.)	REFID=58728
AGNESE	18B	PRL 121 051301	R. Agnese *et al.*	(SuperCDMS Collab.)	REFID=58855
Also		PRL 122 069901 (errat.)	R. Agnese *et al.*	(SuperCDMS Collab.)	REFID=59921
AGUILAR-AR...	18B	PR D98 112004	A.A. Aguilar-Arevalo	(MiniBooNE Collab.)	REFID=59496
AHNEN	18	JCAP 1803 009	M.L. Ahnen *et al.*	(MAGIC Collab.)	REFID=59058
AKERIB	18A	PR D98 062005	D.S. Akerib *et al.*	(LUX Collab.)	REFID=59447
ALBERT	18B	JCAP 1806 043	A. Albert *et al.*	(HAWC Collab.)	REFID=59062
ALBERT	18C	PR D98 123012	A. Albert *et al.*	(HAWC Collab.)	REFID=59510
AMAUDRUZ	18	PRL 121 071801	P.A. Amaudruz *et al.*	(DEAP-3600 Collab.)	REFID=58862
APRILE	18	PRL 121 111302	E. Aprile *et al.*	(XENON1T Collab.)	REFID=59288
ARMENGAUD	18	PR D98 082004	E. Armengaud *et al.*	(EDELWEISS-III Collab.)	REFID=59465
ARNAUD	18	ASP 97 54	Q. Arnaud *et al.*	(NEWS-G Collab.)	REFID=60220
CHANG	18A	PR D98 123004	L.J. Chang, M. Lisanti, S. Mishra-Sharma	(PRIN)	REFID=59509
CRISLER	18	PRL 121 061803	M. Crisler *et al.*	(SENSEI Collab.)	REFID=58859
JIANG	18	PRL 120 241301	H. Jiang *et al.*	(CDEX Collab.)	REFID=58840
KACHULIS	18	PRL 120 221301	C. Kachulis *et al.*	(Super-Kamiokande Collab.)	REFID=58833
KHACHATRY...	18	PR D97 099903	V. Khachatryan *et al.*	(CMS Collab.)	REFID=59240
LISANTI	18	PRL 120 101101	M. Lisanti *et al.*	(PRIN, MIT, MICH)	REFID=58812
MAZZIOTTA	18	PR D98 022006	M. Mazziotta *et al.*	(Fermi-LAT Collab.)	REFID=59242
REN	18	PRL 121 021304	X. Ren *et al.*	(PandaX-II Collab.)	REFID=58848
SIRUNYAN	18BF	JHEP 1806 027	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=59121
SIRUNYAN	18BO	JHEP 1808 130	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=59142
SIRUNYAN	18BV	EPJ C78 291	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=59173
SIRUNYAN	18C	PR D97 032009	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=58718
SIRUNYAN	18CU	JHEP 1801 056	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=59245
SIRUNYAN	18DH	JHEP 1809 046	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=59337
SIRUNYAN	18S	PR D97 092005	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=58938
YANG	18	CP C42 023002	L.T. Yang *et al.*	(CDEX Collab.)	REFID=59267
AABOUD	17A	PL B765 11	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=57705
AABOUD	17AM	PRL 119 181804	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=58271
AABOUD	17AQ	PR D96 112004	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=58319
AABOUD	17BD	EPJ C77 765	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=58360
AABOUD	17R	EPJ C77 393	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=57863
AARTSEN	17	EPJ C77 82	M.G. Aartsen *et al.*	(IceCube Collab.)	REFID=57835
AARTSEN	17A	EPJ C77 146	M.G. Aartsen *et al.*	(IceCube Collab.)	REFID=57844
Also		EPJ C79 214 (errat.)	M.G. Aartsen *et al.*	(IceCube Collab.)	REFID=59712
AARTSEN	17C	EPJ C77 627	M.G. Aartsen *et al.*	(IceCube Collab.)	REFID=58190
AGUILAR-AR...	17	PRL 118 141803	A. Aguilar-Arevalo *et al.*	(DAMIC Collab.)	REFID=57921
AGUILAR-AR...	17A	PRL 118 221803	A.A. Aguilar-Arevalo *et al.*	(MiniBooNE Collab.)	REFID=57932
AKERIB	17	PRL 118 021303	D.S. Akerib *et al.*	(LUX Collab.)	REFID=57652
AKERIB	17A	PRL 118 251302	D.S. Akerib *et al.*	(LUX Collab.)	REFID=57936
ALBERT	17A	PL B769 249	A. Albert *et al.*	(ANTARES Collab.)	REFID=58083
Also		PL B796 253 (errat.)	A. Albert *et al.*	(ANTARES Collab.)	REFID=59931
AMOLE	17	PRL 118 251301	C. Amole *et al.*	(PICO Collab.)	REFID=57935
ANGLOHER	17A	EPJ C77 637	G. Angloher *et al.*	(CRESST Collab.)	REFID=58354
APRILE	17	PRL 118 101101	E. Aprile *et al.*	(XENON100 Collab.)	REFID=57916
APRILE	17A	PR D96 022008	E. Aprile *et al.*	(XENON100 Collab.)	REFID=58023
APRILE	17D	PR D96 042004	E. Aprile *et al.*	(XENON100 Collab.)	REFID=58118
APRILE	17G	PRL 119 181301	E. Aprile *et al.*	(XENON Collab.)	REFID=58269
APRILE	17H	PR D96 122002	E. Aprile *et al.*	(XENON100 Collab.)	REFID=58326
APRILE	17K	JCAP 1710 039	E. Aprile *et al.*	(XENON100 Collab.)	REFID=58766
ARCHAMBAU...	17	PR D95 082001	S. Archambault *et al.*	(VERITAS Collab.)	REFID=57985
AVRORIN	17	JETP 125 80	A.D. Avrorin *et al.*	(BAIKAL Collab.)	REFID=58158
BANERJEE	17	PRL 118 011802	D. Banerjee *et al.*	(NA64 Collab.)	REFID=57649
BARBOSA-D...	17	PR D95 032006	E. Barbosa de Souza *et al.*	(DM17 Collab.)	REFID=57955
BATTAT	17	ASP 91 65	J.B.R. Battat *et al.*	(DRIFT-IId Collab.)	REFID=58037
BEHNKE	17	ASP 90 85	E. Behnke *et al.*	(PICASSO Collab.)	REFID=58036
BOUDAUD	17	PRL 119 021103	M. Boudaud, J. Lavalle, P. Salati		REFID=57943
CHEN	17E	PR D96 102007	X. Chen *et al.*	(PandaX-II Collab.)	REFID=58314
CUI	17A	PRL 119 181302	X. Cui *et al.*	(PandaX-II Collab.)	REFID=58270
FU	17	PRL 118 071301	C. Fu *et al.*	(PandaX-II Collab.)	REFID=57912
Also		PRL 120 049902 (errat.)	C. Fu *et al.*	(PandaX-II Collab.)	REFID=59198
KHACHATRY...	17A	PRL 118 021802	V. Khachatryan *et al.*	(CMS Collab.)	REFID=57654

KHACHATRY...	17F	JHEP 1702 135	V. Khachatryan *et al.*	(CMS Collab.)	REFID=57781
SIRUNYAN	17	JHEP 1703 061	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=57799
SIRUNYAN	17AP	JHEP 1710 180	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=58332
SIRUNYAN	17AQ	JHEP 1710 073	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=58337
SIRUNYAN	17BB	EPJ C77 845	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=58365
SIRUNYAN	17G	JHEP 1707 014	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=57821
SIRUNYAN	17U	JHEP 1709 106	A.M. Sirunyan *et al.*	(CMS Collab.)	REFID=58207
AABOUD	16AD	PL B763 251	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=57694
AABOUD	16D	PR D94 032005	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=57310
AABOUD	16F	JHEP 1606 059	M. Aaboud *et al.*	(ATLAS Collab.)	REFID=57335
AAD	16AF	JHEP 1601 172	G. Aad *et al.*	(ATLAS Collab.)	REFID=57316
AAD	16AG	JHEP 1602 062	G. Aad *et al.*	(ATLAS Collab.)	REFID=57317
AAD	16M	PR D93 072007	G. Aad *et al.*	(ATLAS Collab.)	REFID=57166
AARTSEN	16C	JCAP 1604 022	M.G. Aartsen *et al.*	(IceCube Collab.)	REFID=57476
AARTSEN	16D	EPJ C76 531	M.G. Aartsen *et al.*	(IceCube Collab.)	REFID=57556
ABDALLAH	16	PRL 117 111301	H. Abdallah *et al.*	(H.E.S.S. Collab.)	REFID=57461
ABDALLAH	16A	PRL 117 151302	H. Abdallah *et al.*	(H.E.S.S. Collab.)	REFID=57516
ADRIAN-MAR...	16	PL B759 69	S. Adrian-Martinez *et al.*	(ANTARES Collab.)	REFID=57232
ADRIAN-MAR...	16B	JCAP 1605 016	S. Adrian-Martinez *et al.*	(ANTARES Collab.)	REFID=57478
AGNES	16	PR D93 081101	P. Agnes *et al.*	(DarkSide-50 Collab.)	REFID=57154
AGNESE	16	PRL 116 071301	R. Agnese *et al.*	(SuperCDMS Collab.)	REFID=57180
AGUILAR-AR...	16	PR D94 082006	A. Aguilar-Arevalo *et al.*	(DAMIC Collab.)	REFID=57532
AHNEN	16	JCAP 1602 039	M.L. Ahnen *et al.*	(MAGIC and Fermi-LAT Collab.)	REFID=57473
AKERIB	16	PRL 116 161301	D.S. Akerib *et al.*	(LUX Collab.)	REFID=57185
AKERIB	16A	PRL 116 161302	D.S. Akerib *et al.*	(LUX Collab.)	REFID=57186
AMOLE	16	PR D93 052014	C. Amole *et al.*	(PICO Collab.)	REFID=57270
AMOLE	16A	PR D93 061101	C. Amole *et al.*	(PICO Collab.)	REFID=57275
ANGLOHER	16	EPJ C76 25	G. Angloher *et al.*	(CRESST-II Collab.)	REFID=57358
ANGLOHER	16A	PRL 117 021303	G. Angloher *et al.*	(CRESST-II Collab.)	REFID=57451
APRILE	16	PR D94 092001	E. Aprile *et al.*	(XENON100 Collab.)	REFID=57536
APRILE	16B	PR D94 122001	E. Aprile *et al.*	(XENON100 Collab.)	REFID=57629
ARMENGAUD	16	JCAP 1605 019	E. Armengaud *et al.*	(EDELWEISS-III Collab.)	REFID=57477
AVRORIN	16	ASP 81 12	A.D. Avrorin *et al.*	(BAIKAL Collab.)	REFID=57471
CAPUTO	16	PR D93 062004	R. Caputo *et al.*		REFID=57276
FORNASA	16	PR D94 123005	M. Fornasa *et al.*	(Fermi-LAT Collab.)	REFID=57631
HEHN	16	EPJ C76 548	L. Hehn *et al.*	(EDELWEISS-III Collab.)	REFID=57560
KHACHATRY...	16AJ	PR D93 052011	V. Khachatryan *et al.*	(CMS Collab.)	REFID=57268
KHACHATRY...	16BZ	JHEP 1612 083	V. Khachatryan *et al.*	(CMS Collab.)	REFID=57664
Also		JHEP 1708 035 (errat.)	V. Khachatryan *et al.*	(CMS Collab.)	REFID=58127
KHACHATRY...	16CA	JHEP 1612 088	V. Khachatryan *et al.*	(CMS Collab.)	REFID=57666
KHACHATRY...	16N	PL B755 102	V. Khachatryan *et al.*	(CMS Collab.)	REFID=57207
LEITE	16	JCAP 1611 021	N. Leite *et al.*		REFID=57743
LI	16	PR D93 043518	S. Li *et al.*		REFID=57258
LI	16A	JCAP 1612 028	Z. Li *et al.*		REFID=57745
LIANG	16	PR D94 103502	Y.-F. Liang *et al.*		REFID=57544
LU	16	PR D93 103517	B-Q. Lu, H-S. Zong		REFID=57288
SHIRASAKI	16	PR D94 063522	M. Shirasaki *et al.*		REFID=57437
TAN	16	PR D93 122009	T.H. Tan *et al.*	(PandaX Collab.)	REFID=57302
TAN	16B	PRL 117 121303	A. Tan *et al.*	(PandaX Collab.)	REFID=57463
ZHAO	16	PR D93 092003	W. Zhao *et al.*	(CDEX Collab.)	REFID=57280
AAD	15AS	EPJ C75 92	G. Aad *et al.*	(ATLAS Collab.)	REFID=56660
AAD	15BH	EPJ C75 299	G. Aad *et al.*	(ATLAS Collab.)	REFID=56675
Also		EPJ C75 408 (errat.)	G. Aad *et al.*	(ATLAS Collab.)	REFID=57177
AAD	15CF	PRL 115 131801	G. Aad *et al.*	(ATLAS Collab.)	REFID=56919
AAD	15CS	PR D91 012008	G. Aad *et al.*	(ATLAS Collab.)	REFID=57143
Also		PR D92 059903 (errat.)	G. Aad *et al.*	(ATLAS Collab.)	REFID=56964
AARTSEN	15C	EPJ C75 20	M.G. Aartsen *et al.*	(IceCube Collab.)	REFID=56761
AARTSEN	15E	EPJ C75 492	M.G. Aartsen *et al.*	(IceCube Collab.)	REFID=56937
ABRAMOWSKI	15	PRL 114 081301	A. Abramowski *et al.*	(H.E.S.S. Collab.)	REFID=56743
ACKERMANN	15	PR D91 122002	M. Ackermann *et al.*	(Fermi-LAT Collab.)	REFID=56595
ACKERMANN	15A	JCAP 1509 008	M. Ackermann *et al.*	(Fermi-LAT Collab.)	REFID=56845
ACKERMANN	15B	PRL 115 231301	M. Ackermann *et al.*	(Fermi-LAT Collab.)	REFID=57106
ADRIAN-MAR...	15	JCAP 1510 068	S. Adrian-Martinez *et al.*	(ANTARES Collab.)	REFID=56849
AGNES	15	PL B743 456	P. Agnes *et al.*	(DarkSide-50 Collab.)	REFID=56502
AGNESE	15A	PR D91 052021	R. Agnese *et al.*	(SuperCDMS Collab.)	REFID=56728
AGNESE	15B	PR D92 072003	R. Agnese *et al.*	(SuperCDMS Collab.)	REFID=56890
AMOLE	15	PRL 114 231302	C. Amole *et al.*	(PICO Collab.)	REFID=56475
APRILE	15	PRL 115 091302	E. Aprile *et al.*	(XENON Collab.)	REFID=56491
APRILE	15A	SCI 349 851	E. Aprile *et al.*	(XENON Collab.)	REFID=56976
CHOI	15	PRL 114 141301	K. Choi *et al.*	(Super-Kamiokande Collab.)	REFID=56455
KHACHATRY...	15AG	JHEP 1506 121	V. Khachatryan *et al.*	(CMS Collab.)	REFID=56634
KHACHATRY...	15AL	EPJ C75 235	V. Khachatryan *et al.*	(CMS Collab.)	REFID=56656
KHACHATRY...	15T	PR D91 092005	V. Khachatryan *et al.*	(CMS Collab.)	REFID=56533
NAKAMURA	15	PTEP 2015 4 043F01	K. Nakamura *et al.*	(NEWAGE Collab.)	REFID=56942
XIAO	15	PR D92 052004	X. Xiao *et al.*	(PandaX Collab.)	REFID=56880
AAD	14AI	JHEP 1409 037	G. Aad *et al.*	(ATLAS Collab.)	REFID=56007
AAD	14BK	PRL 112 041802	G. Aad *et al.*	(ATLAS Collab.)	REFID=57167
AAD	14K	PR D90 012004	G. Aad *et al.*	(ATLAS Collab.)	REFID=55782
AAD	14O	PRL 112 201802	G. Aad *et al.*	(ATLAS Collab.)	REFID=55849
ACKERMANN	14	PR D89 042001	M. Ackermann *et al.*	(Fermi-LAT Collab.)	REFID=55796
AGNESE	14	PRL 112 241302	R. Agnese *et al.*	(SuperCDMS Collab.)	REFID=55858
AGNESE	14A	PRL 112 041302	R. Agnese *et al.*	(SuperCDMS Collab.)	REFID=56418
AKERIB	14	PRL 112 091303	D.S. Akerib *et al.*	(LUX Collab.)	REFID=55832
ALEKSIC	14	JCAP 1402 008	J. Aleksic *et al.*	(MAGIC Collab.)	REFID=55964
ANGLOHER	14	EPJ C74 3184	G. Angloher *et al.*	(CRESST-II Collab.)	REFID=56307
APRILE	14A	ASP 54 11	E. Aprile *et al.*	(XENON100 Collab.)	REFID=55956
AVRORIN	14	ASP 62 12	A.D. Avrorin *et al.*	(BAIKAL Collab.)	REFID=56193
FELIZARDO	14	PR D89 072013	M. Felizardo *et al.*	(SIMPLE Collab.)	REFID=56028
LEE	14A	PR D90 052006	H.S. Lee *et al.*	(KIMS Collab.)	REFID=55878
LIU	14A	PR D90 032003	S.K. Liu *et al.*	(CDEX Collab.)	REFID=55826
UCHIDA	14	PTEP 2014 063C01	H. Uchida *et al.*	(XMASS Collab.)	REFID=56090
YUE	14	PR D90 091701	Q. Yue *et al.*	(CDEX Collab.)	REFID=56158
AAD	13AD	JHEP 1304 075	G. Aad *et al.*	(ATLAS Collab.)	REFID=55029
AAD	13C	PRL 110 011802	G. Aad *et al.*	(ATLAS Collab.)	REFID=54791
AALSETH	13	PR D88 012002	C.E. Aalseth *et al.*	(CoGeNT Collab.)	REFID=55164
AARTSEN	13	PRL 110 131302	M.G. Aartsen *et al.*	(IceCube Collab.)	REFID=55200
AARTSEN	13C	PR D88 122001	M.G. Aartsen *et al.*	(IceCube Collab.)	REFID=55611
ABE	13B	PL B719 78	K. Abe *et al.*	(XMASS Collab.)	REFID=54922
ABRAMOWSKI	13	PRL 110 041301	A. Abramowski *et al.*	(H.E.S.S. Collab.)	REFID=55317
ACKERMANN	13A	PR D88 082002	M. Ackermann *et al.*	(Fermi-LAT Collab.)	REFID=55466
ADRIAN-MAR...	13	JCAP 1311 032	S. Adrian-Martinez *et al.*	(ANTARES Collab.)	REFID=55597
AGNESE	13	PR D88 031104	R. Agnese *et al.*	(CDMS Collab.)	REFID=55174
AGNESE	13A	PRL 111 251301	R. Agnese *et al.*	(CDMS Collab.)	REFID=55615
APRILE	13	PRL 111 021301	E. Aprile *et al.*	(XENON100 Collab.)	REFID=55218
BERNABEI	13A	EPJ C73 2648	R. Bernabei *et al.*	(DAMA Collab.)	REFID=55639
BOLIEV	13	JCAP 1309 019	M. Boliev *et al.*		REFID=55514
LI	13B	PRL 110 261301	H.B. Li *et al.*	(TEXONO Collab.)	REFID=55216
SUVOROVA	13	PAN 76 1367	O.V. Suvorova *et al.*	(INRM)	REFID=55643
		Translated from YAF 76 1433.			

ZHAO	13	PR D88 052004	W. Zhao *et al.*	(CDEX Collab.)	REFID=55181
AALTONEN	12K	PRL 108 201802	T. Aaltonen *et al.*	(CDF Collab.)	REFID=54240
AALTONEN	12M	PRL 108 211804	T. Aaltonen *et al.*	(CDF Collab.)	REFID=54242
ABBASI	12	PR D85 042002	R. Abbasi *et al.*	(IceCube Collab.)	REFID=54487
ABRAMOWSKI	12	APJ 750 123	A. Abramowski *et al.*	(H.E.S.S. Collab.)	REFID=55683
ACKERMANN	12	PR D86 022002	M. Ackermann *et al.*	(Fermi-LAT Collab.)	REFID=54422
AKIMOV	12	PL B709 14	D.Yu. Akimov *et al.*	(ZEPLIN-III Collab.)	REFID=54153
ALIU	12	PR D85 062001	E. Aliu *et al.*	(VERITAS Collab.)	REFID=55684
ANGLOHER	12	EPJ C72 1971	G. Angloher *et al.*	(CRESST-II Collab.)	REFID=54137
APRILE	12	PRL 109 181301	E. Aprile *et al.*	(XENON100 Collab.)	REFID=54616
ARCHAMBAU...	12	PL B711 153	S. Archambault *et al.*	(PICASSO Collab.)	REFID=54166
ARMENGAUD	12	PR D86 051701	E. Armengaud *et al.*	(EDELWEISS Collab.)	REFID=54609
BARRETO	12	PL B711 264	J. Barreto *et al.*	(DAMIC Collab.)	REFID=54169
BEHNKE	12	PR D86 052001	E. Behnke *et al.*	(COUPP Collab.)	REFID=54610
Also		PR D90 079902 (errat.)	E. Behnke *et al.*	(COUPP Collab.)	REFID=56151
BROWN	12	PR D85 021301	A. Brown *et al.*	(OXF)	REFID=54390
CHATRCHYAN	12AP	JHEP 1209 094	S. Chatrchyan *et al.*	(CMS Collab.)	REFID=54572
CHATRCHYAN	12T	PRL 108 261803	S. Chatrchyan *et al.*	(CMS Collab.)	REFID=54251
DAHL	12	PRL 108 259001	C.E. Dahl, J. Hall, W.H. Lippincott	(CHIC, FNAL)	REFID=54992
DAW	12	ASP 35 397	E. Daw *et al.*	(DRIFT-IId Collab.)	REFID=54431
FELIZARDO	12	PRL 108 201302	M. Felizardo *et al.*	(SIMPLE Collab.)	REFID=54236
KIM	12	PRL 108 181301	S.C. Kim *et al.*	(KIMS Collab.)	REFID=54232
AALSETH	11	PRL 106 131301	C.E. Aalseth *et al.*	(CoGeNT Collab.)	REFID=16607
AALSETH	11A	PRL 107 141301	C.E. Aalseth *et al.*	(CoGeNT Collab.)	REFID=53823
ABBASI	11C	PR D84 022004	R. Abbasi *et al.*	(IceCube Collab.)	REFID=16533
ABRAMOWSKI	11	PRL 106 161301	A. Abramowski *et al.*	(H.E.S.S. Collab.)	REFID=16615
ACKERMANN	11	PRL 107 241302	M. Ackermann *et al.*	(Fermi-LAT Collab.)	REFID=54028
AHLEN	11	PL B695 124	S. Ahlen *et al.*	(DMTPC Collab.)	REFID=53566
AHMED	11	PR D83 112002	Z. Ahmed *et al.*	(CDMS Collab.)	REFID=16609
AHMED	11A	PR D84 011102	Z. Ahmed *et al.*	(CDMS and EDELWEISS Collabs.)	REFID=16611
AHMED	11B	PRL 106 131302	Z. Ahmed *et al.*	(CDMS Collab.)	REFID=16613
AJELLO	11	PR D84 032007	M. Ajello *et al.*	(Fermi-LAT Collab.)	REFID=53715
ANGLE	11	PRL 107 051301	J. Angle *et al.*	(XENON10 Collab.)	REFID=16659
Also		PRL 110 249901 (errat.)	J. Angle *et al.*	(XENON10 Collab.)	REFID=55000
APRILE	11	PR D84 052003	E. Aprile *et al.*	(XENON100 Collab.)	REFID=53793
APRILE	11A	PR D84 061101	E. Aprile *et al.*	(XENON100 Collab.)	REFID=53794
APRILE	11B	PRL 107 131302	E. Aprile *et al.*	(XENON100 Collab.)	REFID=53821
ARMENGAUD	11	PL B702 329	E. Armengaud *et al.*	(EDELWEISS-II Collab.)	REFID=16711
BEHNKE	11	PRL 106 021303	E. Behnke *et al.*	(COUPP Collab.)	REFID=53601
GERINGER-SA...	11	PRL 107 241303	A. Geringer-Sameth, S.M. Koushiappas		REFID=53954
HORN	11	PL B705 471	M. Horn *et al.*	(ZEPLIN-III Collab.)	REFID=53870
TANAKA	11	APJ 742 78	T. Tanaka *et al.*	(Super-Kamiokande Collab.)	REFID=54074
ABBASI	10	PR D81 057101	R. Abbasi *et al.*	(IceCube Collab.)	REFID=53392
AHMED	10	SCI 327 1619	Z. Ahmed *et al.*	(CDMS II Collab.)	REFID=53691
AKERIB	10	PR D82 122004	D.S. Akerib *et al.*	(CDMS II Collab.)	REFID=53599
AKIMOV	10	PL B692 180	D.Yu. Akimov *et al.*	(ZEPLIN-III Collab.)	REFID=53423
APRILE	10	PRL 105 131302	E. Aprile *et al.*	(XENON100 Collab.)	REFID=53489
ARMENGAUD	10	PL B687 294	E. Armengaud *et al.*	(EDELWEISS-II Collab.)	REFID=53281
FELIZARDO	10	PRL 105 211301	M. Felizardo *et al.*	(The SIMPLE Collab.)	REFID=53463
MIUCHI	10	PL B686 11	K. Miuchi *et al.*	(NEWAGE Collab.)	REFID=53307
ABBASI	09B	PRL 102 201302	R. Abbasi *et al.*	(IceCube Collab.)	REFID=52847
AHMED	09	PRL 102 011301	Z. Ahmed *et al.*	(CDMS Collab.)	REFID=52613
ANGLE	09	PR D80 115005	J. Angle *et al.*	(XENON10 Collab.)	REFID=54072
ANGLOHER	09	ASP 31 270	G. Angloher *et al.*	(CRESST Collab.)	REFID=52769
ARCHAMBAU...	09	PL B682 185	S. Archambault *et al.*	(PICASSO Collab.)	REFID=53085
LEBEDENKO	09A	PRL 103 151302	V.N. Lebedenko *et al.*	(ZEPLIN-III Collab.)	REFID=53093
LIN	09	PR D79 061101	S.T. Lin *et al.*	(TEXONO Collab.)	REFID=52824
AALSETH	08	PRL 101 251301	C.E. Aalseth *et al.*	(CoGeNT Collab.)	REFID=52626
Also		PRL 102 109903 (errat.)	C.E. Aalseth *et al.*	(CoGeNT Collab.)	REFID=54073
ANGLE	08A	PRL 101 091301	J. Angle *et al.*	(XENON10 Collab.)	REFID=52446
BEDNYAKOV	08	PAN 71 111	V.A. Bednyakov, H.P. Klapdor-Kleingrothaus, I.V. Krivosheina		REFID=52471;ERROR=1
		Translated from YAF 71 112.			
ALNER	07	PL B653 161	G.J. Alner *et al.*	(ZEPLIN-II Collab.)	REFID=51878
LEE	07A	PRL 99 091301	H.S. Lee *et al.*	(KIMS Collab.)	REFID=51919
MIUCHI	07	PL B654 58	K. Miuchi *et al.*		REFID=52025
AKERIB	06	PR D73 011102	D.S. Akerib *et al.*	(CDMS Collab.)	REFID=51018
SHIMIZU	06A	PL B633 195	Y. Shimizu *et al.*		REFID=51200
AKERIB	05	PR D72 052009	D.S. Akerib *et al.*	(CDMS Collab.)	REFID=50906
ALNER	05	PL B616 17	G.J. Alner *et al.*	(UK Dark Matter Collab.)	REFID=50608
BARNABE-HE...	05	PL B624 186	M. Barnabe-Heider *et al.*	(PICASSO Collab.)	REFID=50874
BENOIT	05	PL B616 25	A. Benoit *et al.*	(EDELWEISS Collab.)	REFID=50609
GIRARD	05	PL B621 233	T.A. Girard *et al.*	(SIMPLE Collab.)	REFID=50680
GIULIANI	05	PRL 95 101301	F. Giuliani		REFID=50560
GIULIANI	05A	PR D71 123503	F. Giuliani, T.A. Girard		REFID=50669
KLAPDOR-K...	05	PL B609 226	H.V. Klapdor-Kleingrothaus, I.V. Krivosheina, C. Tomei		REFID=50595;ERROR=2
GIULIANI	04	PL B588 151	F. Giuliani, T.A. Girard		REFID=49900
GIULIANI	04A	PRL 93 161301	F. Giuliani		REFID=50254
MIUCHI	03	ASP 19 135	K. Miuchi *et al.*		REFID=49319
TAKEDA	03	PL B572 145	A. Takeda *et al.*		REFID=49551
ANGLOHER	02	ASP 18 43	G. Angloher *et al.*	(CRESST Collab.)	REFID=49046
BELLI	02	PR D66 043503	P. Belli *et al.*		REFID=48986
BERNABEI	02C	EPJ C23 61	R. Bernabei *et al.*	(DAMA Collab.)	REFID=48974
GREEN	02	PR D66 083003	A.M. Green		REFID=49069
BAUDIS	01	PR D63 022001	L. Baudis *et al.*	(Heidelberg-Moscow Collab.)	REFID=47899
SMITH	01	PR D64 043502	D. Smith, N. Weiner		REFID=49225
ULLIO	01	JHEP 0107 044	P. Ullio, M. Kamionkowski, P. Vogel		REFID=49023
BENOIT	00	PL B479 8	A. Benoit *et al.*	(EDELWEISS Collab.)	REFID=47618
BERNABEI	00D	NJP 2 15	R. Bernabei *et al.*	(DAMA Collab.)	REFID=49104
COLLAR	00	PRL 85 3083	J.I. Collar *et al.*	(SIMPLE Collab.)	REFID=47781
AMBROSIO	99	PR D60 082002	M. Ambrosio *et al.*	(Macro Collab.)	REFID=47231
BERNABEI	99	PL B450 448	R. Bernabei *et al.*	(DAMA Collab.)	REFID=46823
BERNABEI	99D	PRL 83 4918	R. Bernabei *et al.*	(DAMA Collab.)	REFID=47316
BRHLIK	99	PL B464 303	M. Brhlik, L. Roszkowski		REFID=47239
DERBIN	99	PAN 62 1886	A.V. Derbin *et al.*		REFID=47313
		Translated from YAF 62 2034.			
KLIMENKO	98	JETPL 67 875	A.A. Klimenko *et al.*		REFID=46039
		Translated from ZETFP 67 835.			
SARSA	97	PR D56 1856	M.L. Sarsa *et al.*	(ZARA)	REFID=45606
ALESSAND...	96	PL B384 316	A. Alessandrello *et al.*	(MILA, MILAI, SASSO)	REFID=44900
BELLI	96	PL B387 222	P. Belli *et al.*	(DAMA Collab.)	REFID=44922
Also		PL B389 783 (errat.)	P. Belli *et al.*	(DAMA Collab.)	REFID=45239
BELLI	96C	NC C19 537	P. Belli *et al.*	(DAMA Collab.)	REFID=45562
BERNABEI	96	PL B389 757	R. Bernabei *et al.*	(DAMA Collab.)	REFID=45075
COLLAR	96	PRL 76 331	J.I. Collar	(SCUC)	REFID=44752
SARSA	96	PL B386 458	M.L. Sarsa *et al.*	(ZARA)	REFID=44919
Also		PR D56 1856	M.L. Sarsa *et al.*	(ZARA)	REFID=45606
SMITH	96	PL B379 299	P.F. Smith *et al.*	(RAL, SHEF, LOIC+)	REFID=44868
SNOWDEN-...	96	PRL 76 332	D.P. Snowden-Ifft, E.S. Freeman, P.B. Price	(UCB)	REFID=44753
GARCIA	95	PR D51 1458	E. Garcia *et al.*	(ZARA, SCUC, PNL)	REFID=44143
QUENBY	95	PL B351 70	J.J. Quenby *et al.*	(LOIC, RAL, SHEF+)	REFID=44278
SNOWDEN-...	95	PRL 74 4133	D.P. Snowden-Ifft, E.S. Freeman, P.B. Price	(UCB)	REFID=44258
Also		PRL 76 331	J.I. Collar	(SCUC)	REFID=44752
Also		PRL 76 332	D.P. Snowden-Ifft, E.S. Freeman, P.B. Price	(UCB)	REFID=44753
BECK	94	PL B336 141	M. Beck *et al.*	(MPIK, KIAE, SASSO)	REFID=43965
BACCI	92	PL B293 460	C. Bacci *et al.*	(Beijing-Roma-Saclay Collab.)	REFID=42226
REUSSER	91	PL B255 143	D. Reusser *et al.*	(NEUC, CIT, PSI)	REFID=41453
CALDWELL	88	PRL 61 510	D.O. Caldwell *et al.*	(UCSB, UCB, LBL)	REFID=40752