SEARCHES not in other sections

NODE=SXXX005

Magnetic Monopole Searches

NODE=S028

The most sensitive experiments obtain negative results.

Best cosmic-ray supermassive monopole flux limit:

$< 1.4 \times 10^{-16}$ cm^{-2}sr^{-1}s^{-1} for $1.1 \times 10^{-4} < \beta < 1$

NODE=S028FX;DTYPE=Y;OUR LIM;
→ UNCHECKED ←

Supersymmetric Particle Searches

NODE=S046

All supersymmetric mass bounds here are model dependent.

The limits assume:

1) $\widetilde{\chi}_1^0$ is the lightest supersymmetric particle; 2) R-parity is conserved, unless stated otherwise;

See the Particle Listings for a Note giving details of supersymmetry.

$\widetilde{\chi}_i^0$ — neutralinos (mixtures of $\widetilde{\gamma}$, $\widetilde{Z}^0$, and $\widetilde{H}_i^0$)

Mass $m_{\widetilde{\chi}_1^0} > 0$ GeV, CL = 95%
[general MSSM, non-universal gaugino masses]

NODE=S046Z6X;DTYPE=M;CLUMP=B;
OUR EVAL;→ UNCHECKED ←

Mass $m_{\widetilde{\chi}_1^0} > 46$ GeV, CL = 95%
[all tanβ, all m_0, all $m_{\widetilde{\chi}_2^0} - m_{\widetilde{\chi}_1^0}$]

NODE=S046Z1X;DTYPE=M;CLUMP=B;
OUR EVAL;→ UNCHECKED ←

Mass $m_{\widetilde{\chi}_2^0} > 62.4$ GeV, CL = 95%
[1<tanβ <40, all m_0, all $m_{\widetilde{\chi}_2^0} - m_{\widetilde{\chi}_1^0}$]

NODE=S046Z2X;DTYPE=M;CLUMP=B;
OUR EVAL;→ UNCHECKED ←

Mass $m_{\widetilde{\chi}_3^0} > 99.9$ GeV, CL = 95%
[1<tanβ <40, all m_0, all $m_{\widetilde{\chi}_2^0} - m_{\widetilde{\chi}_1^0}$]

NODE=S046Z3X;DTYPE=M;CLUMP=B;
OUR EVAL;→ UNCHECKED ←

Mass $m_{\widetilde{\chi}_4^0} > 116$ GeV, CL = 95%
[1<tanβ <40, all m_0, all $m_{\widetilde{\chi}_2^0} - m_{\widetilde{\chi}_1^0}$]

NODE=S046Z4X;DTYPE=M;CLUMP=B;
OUR EVAL;→ UNCHECKED ←

Mass $m_{\widetilde{\chi}}$ none 200–670 GeV, CL = 95% [R-Parity Violating]
[wino production, $\widetilde{\chi} \to b + \ell/\nu + t/b$ via λ'_{i33} coupling]

NODE=S046Z5X;DTYPE=M;CLUMP=B;
OUR EVAL;→ UNCHECKED ←

$\widetilde{\chi}_i^\pm$ — charginos (mixtures of $\widetilde{W}^\pm$ and $\widetilde{H}_i^\pm$)

Mass $m_{\widetilde{\chi}_1^\pm} > 94$ GeV, CL = 95%
[tan$\beta < 40$, $m_{\widetilde{\chi}_1^\pm} - m_{\widetilde{\chi}_1^0} > 3$ GeV, all m_0]

NODE=S046W1X;DTYPE=M;CLUMP=H;
OUR EVAL;→ UNCHECKED ←

Mass $m_{\widetilde{\chi}_1^\pm} > 1000$ GeV, CL = 95%
[$2\ell + \not{E}_T$, Tchi1chi1C, $m_{\widetilde{\chi}_1^0}$=0 GeV]

NODE=S046W2X;DTYPE=M;CLUMP=H;
OUR EVAL;→ UNCHECKED ←

Mass $m_{\widetilde{\chi}_1^\pm} > 1600$ GeV, CL = 95% [R-Parity Violating]
[Tchi1n2l , $\widetilde{\chi}_1^0 \to \ell^\pm \ell^\mp \nu$, $\lambda_{12k} \neq 0$, $m_{\widetilde{\chi}_1^0} = 1200$ GeV]

NODE=S046W3X;DTYPE=M;CLUMP=H;
OUR EVAL;→ UNCHECKED ←

$\widetilde{\chi}^\pm$ — long-lived chargino

Mass $m_{\widetilde{\chi}^\pm} > 1050$ GeV, CL = 95%
[$\widetilde{\chi}^\pm \to \widetilde{\chi}_1^0 \pi^\pm$, wino LSP, stable]

NODE=S046S1N;DTYPE=M;CLUMP=A;
OUR EVAL;→ UNCHECKED ←

Mass $m_{\widetilde{\chi}^\pm} > 1050$ GeV, CL = 95%
[$\widetilde{\chi}^\pm \to \widetilde{\chi}_1^0 \pi^\pm$, wino LSP,$\tau$=20 ns]

NODE=S046S2N;DTYPE=M;CLUMP=A;
OUR EVAL;→ UNCHECKED ←

$\widetilde{\nu}$ — sneutrino

Mass $m >$ 41 GeV, CL = 95% [model independent] NODE=S046I1X;DTYPE=M;CLUMP=C;
OUR EVAL;→ UNCHECKED ←
Mass $m >$ 94 GeV, CL = 95% NODE=S046SNU;DTYPE=M;CLUMP=C
[CMSSM, $1 \leq \tan\beta \leq 40$, $m_{\widetilde{e}_R} - m_{\widetilde{\chi}_1^0} > 10$ GeV]
Mass $m >$ 4200 GeV, CL = 95% [R-Parity Violating] NODE=S046I2X;DTYPE=M;CLUMP=C;
OUR EVAL;→ UNCHECKED ←
[$1e + 1\mu$, $\nu_\tau \rightarrow e\mu$, $\lambda = \lambda' = 0.1$]

$\widetilde{e}$ — scalar electron (selectron)

Mass $m >$ 107 GeV, CL = 95% [all $m_{\widetilde{e}_L} - m_{\widetilde{\chi}_1^0}$] NODE=S046SE;DTYPE=M;CLUMP=J
Mass $m >$ 700 GeV, CL = 95% NODE=S046J1X;DTYPE=M;CLUMP=J;
OUR EVAL;→ UNCHECKED ←
[$2\ell + \not{E}_T$, $m_{\widetilde{\ell}_R} = m_{\widetilde{\ell}_L}$ and $\widetilde{\ell} = \widetilde{e}$, $\widetilde{\mu}$, $m_{\widetilde{\chi}_1^0} = 0$ GeV]
Mass $m >$ 250 GeV, CL = 95% NODE=S046J2X;DTYPE=M;CLUMP=J;
OUR EVAL;→ UNCHECKED ←
[$\ell^\pm \ell^\mp + \not{E}_T$, $\widetilde{e}_R$, $m_{\widetilde{\chi}_1^0} = 0$ GeV]
Mass $m >$ 410 GeV, CL = 95% [R-Parity Violating] NODE=S046SEV;DTYPE=M;CLUMP=J
[$\geq 4\ell^\pm$, $\widetilde{\ell} \rightarrow l\widetilde{\chi}_1^0$, $\widetilde{\chi}_1^0 \rightarrow \ell^\pm \ell^\mp \nu$]
Mass $m >$ 1200 GeV, CL = 95% [R-Parity Violating] NODE=S046J5X;DTYPE=M;CLUMP=J;
OUR EVAL;→ UNCHECKED ←
[$\geq 4\ell$, $\lambda_{12k} \neq 0$, $m_{\widetilde{\chi}_1^0} = 900$ GeV (m-degenerate $\widetilde{\ell}_L$, $\widetilde{\nu}$)]

$\widetilde{\mu}$ — scalar muon (smuon)

Mass $m >$ 700 GeV, CL = 95% NODE=S046J3X;DTYPE=M;CLUMP=K;
OUR EVAL;→ UNCHECKED ←
[$2\ell + \not{E}_T$, $m_{\widetilde{\ell}_R} = m_{\widetilde{\ell}_L}$ and $\widetilde{\ell} = \widetilde{e}$, $\widetilde{\mu}$, $m_{\widetilde{\chi}_1^0} = 0$ GeV]
Mass $m >$ 210, CL = 95% NODE=S046J4X;DTYPE=M;CLUMP=K;
OUR EVAL;→ UNCHECKED ←
[$\ell^\pm \ell^\mp + \not{E}_T$, $\widetilde{\mu}_R$, $m_{\widetilde{\chi}_1^0} = 0$ GeV]
Mass $m >$ 94 GeV, CL = 95% NODE=S046SMU;DTYPE=M;CLUMP=K
[CMSSM, $1 \leq \tan\beta \leq 40$, $m_{\widetilde{\mu}_R} - m_{\widetilde{\chi}_1^0} > 10$ GeV]
Mass $m >$ 410 GeV, CL = 95% [R-Parity Violating] NODE=S046SMV;DTYPE=M;CLUMP=K
[$\geq 4\ell^\pm$, $\widetilde{\ell} \rightarrow l\widetilde{\chi}_1^0$, $\widetilde{\chi}_1^0 \rightarrow \ell^\pm \ell^\mp \nu$]
Mass $m >$ 1200 GeV, CL = 95% [R-Parity Violating] NODE=S046J6X;DTYPE=M;CLUMP=K;
OUR EVAL;→ UNCHECKED ←
[$\geq 4\ell$, $\lambda_{12k} \neq 0$, $m_{\widetilde{\chi}_1^0} = 900$ GeV (m-degenerate $\widetilde{\ell}_L$, $\widetilde{\nu}$)]

$\widetilde{\tau}$ — scalar tau (stau)

Mass $m >$ 81.9 GeV, CL = 95% NODE=S046STA;DTYPE=M;CLUMP=L
[$m_{\widetilde{\tau}_R} - m_{\widetilde{\chi}_1^0} > 15$ GeV, all θ_τ, B($\widetilde{\tau} \rightarrow \tau\widetilde{\chi}_1^0$) = 100%]
Mass $m >$ 500 GeV, CL = 95% NODE=S046J7X;DTYPE=M;CLUMP=L;
OUR EVAL;→ UNCHECKED ←
[2 hadronic $\tau + \not{E}_T$, $\widetilde{\tau}_{R,L} \rightarrow \tau\widetilde{\chi}_1^0$, $m_{\widetilde{\chi}_1^0} = 1$ GeV]
Mass $m >$ 90 GeV, CL = 95% [R-Parity Violating] NODE=S046STU;DTYPE=M;CLUMP=L
[$\widetilde{\tau}_R$, indirect, $\Delta m > 5$ GeV]
Mass $m >$ 1200, CL = 95% [R-Parity Violating] NODE=S046J8X;DTYPE=M;CLUMP=L;
OUR EVAL;→ UNCHECKED ←
[$\geq 4\ell$, $\lambda_{12k} \neq 0$, $m_{\widetilde{\chi}_1^0} = 900$ GeV (m-degenerate $\widetilde{\ell}_L$, $\widetilde{\nu}$)]
Mass $m >$ 286 GeV, CL = 95% [long-lived $\widetilde{\tau}$] NODE=S046L1X;DTYPE=M;CLUMP=L;
OUR EVAL;→ UNCHECKED ←

$\widetilde{q}$ – squarks of the first two quark generations

Mass $m > 1.220 \times 10^3$ GeV, CL = 95% NODE=S046SQK;DTYPE=M;CLUMP=N
[jets + $\not{E}_T$, Tsqk1, 1 non-degenerate $\widetilde{q}$, $m_{\widetilde{\chi}_1^0} = 0$ GeV]
Mass $m > 1.600 \times 10^3$ GeV, CL = 95% [R-Parity Violating] NODE=S046SQV;DTYPE=M;CLUMP=N
[$\widetilde{q} \rightarrow q\widetilde{\chi}_1^0$, $\widetilde{\chi}_1^0 \rightarrow \ell\ell\nu$, λ_{121},$\lambda_{122} \neq 0$, $m_{\widetilde{g}} = 2400$GeV]
Mass $m >$ 1000 GeV, CL = 95% [R-Parity Violating] NODE=S046NX4;DTYPE=M;CLUMP=N;
OUR EVAL;→ UNCHECKED ←
[jets, $\widetilde{q} \rightarrow q\widetilde{\chi}_1^0$, $\widetilde{\chi}_1^0 \rightarrow \ell q q$, $m_{\widetilde{\chi}_1^0} = 108$ GeV and $2.5 < c\tau_{\widetilde{\chi}_1^0} < 200$ mm]

$\widetilde{q}$ — long-lived squark

Mass $m >$ 1340 GeV, CL = 95% [$\widetilde{t}$ R-hadrons] NODE=S046SQ1;DTYPE=M;CLUMP=D;
OUR EVAL;→ UNCHECKED ←

Mass $m >$ 1250 GeV, CL = 95% [$\widetilde{b}$ R-hadrons] NODE=S046SQ2;DTYPE=M;CLUMP=D;
OUR EVAL;→ UNCHECKED ←

Mass $m >$ 1350 GeV, CL = 95% NODE=S046SQ3;DTYPE=M;CLUMP=D;
OUR EVAL;→ UNCHECKED ←
[long-lived $\widetilde{t}$, RPV, $\widetilde{t} \rightarrow\ b\ell$, 7 mm $< c\tau <$ 110 mm]

$\widetilde{b}$ — scalar bottom (sbottom)

Mass $m >$ 1.270×10^3 GeV, CL = 95% NODE=S046SBT;DTYPE=M;CLUMP=R
[b-jets + $\not{E}_T$, Tsbot1, $m_{\widetilde{\chi}^0_1}$=0 GeV]

Mass $m >$ 307 GeV, CL = 95% [R-Parity Violating] NODE=S046SBV;DTYPE=M;CLUMP=R
[$\widetilde{b} \rightarrow\ td$ or ts, λ''_{332} or λ''_{331} coupling]

$\widetilde{t}$ — scalar top (stop)

Mass $m >$ 1.310×10^3 GeV, CL = 95% NODE=S046STP;DTYPE=M;CLUMP=S
[jets + $\not{E}_T$, Tstop1, $m_{\widetilde{\chi}^0_1} <$ 300 GeV]

Mass $m >$ 1900 GeV, CL = 95% [R-Parity Violating] NODE=S046S1X;DTYPE=M;CLUMP=S;
OUR EVAL;→ UNCHECKED ←
[$\widetilde{t} \rightarrow\ be$, prompt, Tstop2RPV]

Mass $m >$ 1800 GeV, CL = 95% [R-Parity Violating] NODE=S046S2X;DTYPE=M;CLUMP=S;
OUR EVAL;→ UNCHECKED ←
[$\widetilde{t} \rightarrow\ b\mu$, prompt, Tstop2RPV]

Mass $m >$ 800 GeV, CL = 95% [R-Parity Violating] NODE=S046S3X;DTYPE=M;CLUMP=S;
OUR EVAL;→ UNCHECKED ←
[$\widetilde{t} \rightarrow\ b\tau$, prompt, Tstop2RPV]

Mass $m >$ 460 GeV, CL = 95% NODE=S046STV;DTYPE=M;CLUMP=S
[R-Parity Violating, long-lived $\widetilde{t}$, $\widetilde{t} \rightarrow\ d\bar{\ell}$, 0.01cm $< c\tau <$ 1000 cm]

$\widetilde{g}$ — gluino

Mass $m >$ 2.300×10^3 GeV, CL = 95% NODE=S046GNO;DTYPE=M;CLUMP=O
[jets + $\not{E}_T$, Tglu1A, $m_{\widetilde{\chi}^0_1} <$ 200 GeV]

Mass $m >$ 2.260×10^3 GeV, CL = 95% [R-Parity Violating] NODE=S046GNV;DTYPE=M
[$\geq 4\ell$, $\lambda_{12k} \neq 0$, $m_{\widetilde{\chi}^0_1} >$ 1000 GeV]

Technicolor

NODE=S057

The limits for technicolor (and top-color) particles are quite varied depending on assumptions. See the Technicolor section of the full *Review* (the data listings).

Quark and Lepton Compositeness, Searches for

NODE=S054

Scale Limits Λ for Contact Interactions (the lowest dimensional interactions with four fermions)

CLUMP=B

If the Lagrangian has the form

$$\pm \frac{g^2}{2\Lambda^2}\ \overline{\psi}_L \gamma_\mu \psi_L \overline{\psi}_L \gamma^\mu \psi_L$$

(with $g^2/4\pi$ set equal to 1), then we define $\Lambda \equiv \Lambda^{\pm}_{LL}$. For the full definitions and for other forms, see the Note in the Listings on Searches for Quark and Lepton Compositeness in the full *Review* and the original literature.

$\Lambda^{+}_{LL}(eeee)$ $>$ 8.3 TeV, CL = 95% NODE=S0541EX;DTYPE=B;CLUMP=B;
OUR EVAL;→ UNCHECKED ←

$\Lambda^{-}_{LL}(eeee)$ $>$ 10.3 TeV, CL = 95% NODE=S0542EX;DTYPE=B;CLUMP=B;
OUR EVAL;→ UNCHECKED ←

$\Lambda^{+}_{LL}(ee\mu\mu)$ $>$ 8.5 TeV, CL = 95% NODE=S0541MX;DTYPE=B;CLUMP=B;
OUR EVAL;→ UNCHECKED ←

$\Lambda_{LL}^{-}(eee\mu\mu)$	$>$ 9.5 TeV, CL = 95%	NODE=S0542MX;DTYPE=B;CLUMP=B; OUR EVAL;→ UNCHECKED ←
$\Lambda_{LL}^{+}(eee\tau\tau)$	$>$ 7.9 TeV, CL = 95%	NODE=S0541TX;DTYPE=B;CLUMP=B; OUR EVAL;→ UNCHECKED ←
$\Lambda_{LL}^{-}(eee\tau\tau)$	$>$ 7.2 TeV, CL = 95%	NODE=S0542TX;DTYPE=B;CLUMP=B; OUR EVAL;→ UNCHECKED ←
$\Lambda_{LL}^{+}(\ell\ell\ell\ell)$	$>$ 9.1 TeV, CL = 95%	NODE=S0541LX;DTYPE=B;CLUMP=B; OUR EVAL;→ UNCHECKED ←
$\Lambda_{LL}^{-}(\ell\ell\ell\ell)$	$>$ 10.3 TeV, CL = 95%	NODE=S0542LX;DTYPE=B;CLUMP=B; OUR EVAL;→ UNCHECKED ←
$\Lambda_{LL}^{+}(eeqq)$	$>$ 24 TeV, CL = 95%	NODE=S0541HX;DTYPE=B;CLUMP=B; OUR EVAL;→ UNCHECKED ←
$\Lambda_{LL}^{-}(eeqq)$	$>$ 37 TeV, CL = 95%	NODE=S0542HX;DTYPE=B;CLUMP=B; OUR EVAL;→ UNCHECKED ←
$\Lambda_{LL}^{+}(eeuu)$	$>$ 23.3 TeV, CL = 95%	NODE=S0543HX;DTYPE=B;CLUMP=B; OUR EVAL;→ UNCHECKED ←
$\Lambda_{LL}^{-}(eeuu)$	$>$ 12.5 TeV, CL = 95%	NODE=S0544HX;DTYPE=B;CLUMP=B; OUR EVAL;→ UNCHECKED ←
$\Lambda_{LL}^{+}(eedd)$	$>$ 11.1 TeV, CL = 95%	NODE=S0545HX;DTYPE=B;CLUMP=B; OUR EVAL;→ UNCHECKED ←
$\Lambda_{LL}^{-}(eedd)$	$>$ 26.4 TeV, CL = 95%	NODE=S0546HX;DTYPE=B;CLUMP=B; OUR EVAL;→ UNCHECKED ←
$\Lambda_{LL}^{+}(eecc)$	$>$ 9.4 TeV, CL = 95%	NODE=S0547HX;DTYPE=B;CLUMP=B; OUR EVAL;→ UNCHECKED ←
$\Lambda_{LL}^{-}(eecc)$	$>$ 5.6 TeV, CL = 95%	NODE=S0548HX;DTYPE=B;CLUMP=B; OUR EVAL;→ UNCHECKED ←
$\Lambda_{LL}^{+}(eebb)$	$>$ 9.4 TeV, CL = 95%	NODE=S0541BX;DTYPE=B;CLUMP=B; OUR EVAL;→ UNCHECKED ←
$\Lambda_{LL}^{-}(eebb)$	$>$ 10.2 TeV, CL = 95%	NODE=S0542BX;DTYPE=B;CLUMP=B; OUR EVAL;→ UNCHECKED ←
$\Lambda_{LL}^{+}(\mu\mu qq)$	$>$ 23.3 TeV, CL = 95%	NODE=S0541CX;DTYPE=B;CLUMP=B; OUR EVAL;→ UNCHECKED ←
$\Lambda_{LL}^{-}(\mu\mu qq)$	$>$ 40.0 TeV, CL = 95%	NODE=S0542CX;DTYPE=B;CLUMP=B; OUR EVAL;→ UNCHECKED ←
$\Lambda(\ell\nu\ell\nu)$	$>$ 3.10 TeV, CL = 90%	NODE=S054CTN;DTYPE=B;CLUMP=B
$\Lambda(e\nu qq)$	$>$ 2.81 TeV, CL = 95%	NODE=S054CQN;DTYPE=B;CLUMP=B
$\Lambda_{LL}^{+}(qqqq)$	$>$ 13.1 none 17.4–29.5 TeV, CL = 95%	NODE=S0541QX;DTYPE=B;CLUMP=B; OUR EVAL;→ UNCHECKED ←
$\Lambda_{LL}^{-}(qqqq)$	$>$ 21.8 TeV, CL = 95%	NODE=S0542QX;DTYPE=B;CLUMP=B; OUR EVAL;→ UNCHECKED ←
$\Lambda_{LL}^{+}(\nu\nu qq)$	$>$ 5.0 TeV, CL = 95%	NODE=S0541DX;DTYPE=B;CLUMP=B; OUR EVAL;→ UNCHECKED ←
$\Lambda_{LL}^{-}(\nu\nu qq)$	$>$ 5.4 TeV, CL = 95%	NODE=S0542DX;DTYPE=B;CLUMP=B; OUR EVAL;→ UNCHECKED ←

Excited Leptons CLUMP=A

The limits from $\ell^{*+}\ell^{*-}$ do not depend on λ (where λ is the $\ell\ell^*$ transition coupling). The λ-dependent limits assume chiral coupling.

$e^{*\pm}$ — excited electron

Mass $m >$ 103.2 GeV, CL = 95% (from e^*e^*) NODE=S054EXP;DTYPE=M;CLUMP=A

Mass $m >$ 5.600×10^3 GeV, CL = 95% (from ee^*) NODE=S054EXS;DTYPE=M;CLUMP=A

Mass $m >$ 356 GeV, CL = 95% (if $\lambda_\gamma = 1$) NODE=S054EXG;DTYPE=M;CLUMP=A

$\mu^{*\pm}$ — excited muon

Mass $m >$ 103.2 GeV, CL = 95% (from $\mu^*\mu^*$) NODE=S054MXP;DTYPE=M;CLUMP=H

Mass $m >$ 5.700×10^3 GeV, CL = 95% (from $\mu\mu^*$) NODE=S054MXS;DTYPE=M;CLUMP=H

$\tau^{*\pm}$ — excited tau

Mass $m >$ 103.2 GeV, CL = 95% (from $\tau^*\tau^*$) NODE=S054TXP;DTYPE=M;CLUMP=J

Mass $m >$ 4.600×10^3 GeV, CL = 95% (from $\tau\tau^*$) NODE=S054TXS;DTYPE=M;CLUMP=J

ν^* — excited neutrino

Mass $m >$ 1.600×10^3 GeV, CL = 95% (from $\nu^*\nu^*$) NODE=S054EXN;DTYPE=M;CLUMP=N

Mass $m >$ 213 GeV, CL = 95% (from ν^*X) NODE=S054EXO;DTYPE=M;CLUMP=N

q^* — excited quark

Mass $m >$ 338 GeV, CL = 95% (from q^*q^*) NODE=S054EQP;DTYPE=M;CLUMP=Z

Mass $m >$ 6700 GeV, CL = 95% (from q^*X) NODE=S054EQS;DTYPE=M;CLUMP=Z; OUR LIM;→ UNCHECKED ←

Color Sextet and Octet Particles CLUMP=Q

Color Sextet Quarks (q_6)

Mass $m >$ 84 GeV, CL = 95% (Stable q_6) NODE=S054CQ;DTYPE=M;CLUMP=Q

Color Octet Charged Leptons (ℓ_8)

Mass $m >$ 86 GeV, CL = 95% (Stable ℓ_8) NODE=S054CL;DTYPE=M;CLUMP=L

Color Octet Neutrinos (ν_8)

Mass $m >$ 110 GeV, CL = 90% ($\nu_8 \rightarrow \nu g$) NODE=S054CN;DTYPE=M;CLUMP=O

Extra Dimensions

NODE=S071

Please refer to the Extra Dimensions section of the full *Review* for a discussion of the model-dependence of these bounds, and further constraints.

Constraints on the radius of the extra dimensions, for the case of two-flat dimensions of equal radii CLUMP=Y

(direct tests of Newton's law)

$R <$ 3.8 μm, CL = 95% ($pp \rightarrow jG$) NODE=S071OS6;DTYPE=y;CLUMP=Y

$R <$ 0.16–916 nm (astrophysics; limits depend on technique and assumptions) NODE=S071RDA;DTYPE=y;CLUMP=Y; OUR LIM;→ UNCHECKED ←

Constraints on the fundamental gravity scale CLUMP=W

$M_{TT} >$ 9.02 TeV, CL = 95% ($pp \rightarrow$ dijet, angular distribution) NODE=S071GEX;DTYPE=w;CLUMP=W

$M_c >$ 4.16 TeV, CL = 95% ($pp \rightarrow \ell\bar{\ell}$) NODE=S071KK;DTYPE=w;CLUMP=W

Constraints on the Kaluza-Klein graviton in warped extra dimensions CLUMP=X

$M_G >$ 4.78 TeV, CL = 95% ($pp \rightarrow e^+e^-,\ \mu^+\mu^-$) NODE=S071RSG;DTYPE=y;CLUMP=X

Constraints on the Kaluza-Klein gluon in warped extra dimensions CLUMP=Z

$M_{g_{KK}} >$ 3.8 TeV, CL = 95% ($g_{KK} \rightarrow t\bar{t}$) NODE=S071KKG;DTYPE=y;CLUMP=Z

WIMP and Dark Matter Searches

NODE=S030

No confirmed evidence found for galactic
WIMPs from the GeV to the TeV mass scales and down to 1×10^{-10} pb spin independent cross section at M = 100 GeV.