NODE=S045

Ξ_c^+

$I(J^P) = \frac{1}{2}(\frac{1}{2}^+)$ Status: ∗∗∗

NODE=S045

Neither of J or P has actually been measured.

NODE=S045

Ξ_c^+ MASS

NODE=S045M

The fit uses the Ξ_c^+ and Ξ_c^0 mass and mass-difference measurements.

NODE=S045M

NODE=S045M

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*	
2467.79± 0.15 OUR FIT Error includes scale factor of 1.1. [2467.71 ± 0.23 MeV OUR 2025 FIT Scale factor = 1.3]						NEW
2467.95± 0.19 OUR AVERAGE						
2467.97± 0.14± 0.17	3.8k	[1] AAIJ	14Z	LHCB	pp at 7, 8 TeV	
2468.00± 0.18± 0.51	5.1k	AALTONEN	14B	CDF	$p\overline{p}$ at 1.96 TeV	SYCLP2=G
2468.1 ± 0.4 $^{+0.2}_{-1.4}$	4.9k	[2] LESIAK	05	BELL	e^+e^-, $\Upsilon(4S)$	SYCLP2=D
2465.8 ± 1.9 ± 2.5	90	FRABETTI	98	E687	γ Be, $\overline{E}_\gamma$= 220 GeV	
2467.0 ± 1.6 ± 2.0	147	EDWARDS	96	CLE2	$e^+e^- \approx \Upsilon(4S)$	
2465.1 ± 3.6 ± 1.9	30	ALBRECHT	90F	ARG	e^+e^- at $\Upsilon(4S)$	SYCLP2=C
2467 ± 3 ± 4	23	ALAM	89	CLEO	e^+e^- 10.6 GeV	SYCLP2=A
2466.5 ± 2.7 ± 1.2	5	BARLAG	89C	ACCM	π^- Cu 230 GeV	SYCLP2=B
• • • We do not use the following data for averages, fits, limits, etc. • • •						
2464.4 ± 2.0 ± 1.4	30	FRABETTI	93B	E687	See FRABETTI 98	
2459 ± 5 ±30	56	[3] COTEUS	87	SPEC	$nA \simeq$ 600 GeV	
2460 ±25	82	BIAGI	83	SPEC	Σ^- Be 135 GeV	

[1] AAIJ 14Z systematic error includes in quadrature the 0.14 MeV uncertainty from the m(Λ_c^+) mass value. NODE=S045M;LINKAGE=C

[2] The systematic error was (wrongly) given the other way round in LESIAK 05; see the erratum. NODE=S045M;LINKAGE=LE

[3] Although COTEUS 87 claims to agree well with BIAGI 83 on the mass and width, there appears to be a discrepancy between the two experiments. BIAGI 83 sees a single peak (stated significance about 6 standard deviations) in the $\Lambda K^- \pi^+ \pi^+$ mass spectrum. COTEUS 87 sees *two* peaks in the same spectrum, one at the Ξ_c^+ mass, the other 75 MeV lower. The latter is attributed to $\Xi_c^+ \to \Sigma^0 K^- \pi^+ \pi^+ \to (\Lambda\gamma) K^- \pi^+ \pi^+$, with the γ unseen. The *combined* significance of the double peak is stated to be 5.5 standard deviations. But the absence of any trace of a lower peak in BIAGI 83 seems to us to throw into question the interpretation of the lower peak of COTEUS 87. NODE=S045M;LINKAGE=A

Ξ_c^+ MEAN LIFE

NODE=S045T

NODE=S045T

VALUE (10^{-15} s)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
453± 5 OUR AVERAGE					
454± 5± 2	56k	[1] AAIJ	19AG	LHCB	$\Xi_c^+ \to pK^-\pi^+$
503± 47± 18	250	MAHMOOD	02	CLE2	$e^+e^- \approx \Upsilon(4S)$
439± 22± 9	532	LINK	01D	FOCS	γ nucleus, $\overline{E}_\gamma \approx$ 180 GeV
340^{+70}_{-50}± 20	56	FRABETTI	98	E687	γ Be, $\overline{E}_\gamma$= 220 GeV
400^{+180}_{-120}±100	102	COTEUS	87	SPEC	$nA \simeq$ 600 GeV
$480^{+210}_{-150}{}^{+200}_{-100}$	53	BIAGI	85C	SPEC	Σ^- Be 135 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
410^{+110}_{-80}± 20	30	FRABETTI	93B	E687	See FRABETTI 98
200^{+110}_{-60}	6	BARLAG	89C	ACCM	π^- (K^-) Cu 230 GeV

[1] AAIJ 19AG reports [Ξ_c^+ MEAN LIFE] / [$D^\pm$ MEAN LIFE] = 0.4392 ± 0.0034 ± 0.0028 which we multiply by our best (shown rounded) value $D^\pm$ MEAN LIFE = (1.033 ± 0.005) × 10^{-12} s. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value. NODE=S045T;LINKAGE=A

Ξ_c^+ DECAY MODES

NODE=S045215;NODE=S045

Branching fractions marked with a footnote, e.g. [a], have been corrected for decay modes not observed in the experiments. For example, the submode fraction $\Xi_c^+ \to \Sigma^+ \overline{K}^*(892)^0$ seen in $\Xi_c^+ \to \Sigma^+ K^- \pi^+$ has been multiplied up to include $\overline{K}^*(892)^0 \to \overline{K}^0 \pi^0$ decays.

NODE=S045

	Mode		Fraction (Γ_i/Γ)	Scale factor/ Confidence level	
	Cabibbo-favored ($S = -2$) decays				NODE=S045;CLUMP=A
Γ_1	$p 2K_S^0$		$(2.5\pm1.3)\times10^{-3}$		DESIG=21
Γ_2	$\Lambda \overline{K}^0 \pi^+$		—		DESIG=15;OUR EST;→ UNCHECKED ←
Γ_3	$\Sigma(1385)^+ \overline{K}^0$	[a]	(2.9 ± 2.0) %		DESIG=16
Γ_4	$\Lambda K^- 2\pi^+$		$(9 \pm4)\times10^{-3}$		DESIG=1
Γ_5	$\Lambda \overline{K}^*(892)^0 \pi^+$	[a]	$< 5 \times10^{-3}$	CL=90%	DESIG=8
Γ_6	$\Sigma(1385)^+ K^- \pi^+$	[a]	$< 6 \times10^{-3}$	CL=90%	DESIG=9
Γ_7	$\Sigma^+ K_S^0$		$(1.9\pm0.9)\times10^{-3}$		DESIG=27
Γ_8	$\Sigma^+ K^- \pi^+$		(2.7 ± 1.2) %		DESIG=4
Γ_9	$\Sigma^+ \overline{K}^*(892)^0$	[a]	(2.3 ± 1.1) %		DESIG=6
Γ_{10}	$\Sigma^0 K^- 2\pi^+$		$(8 \pm5)\times10^{-3}$		DESIG=2
Γ_{11}	$\Xi^0 \pi^+$		$(7.2\pm3.2)\times10^{-3}$		DESIG=11
Γ_{12}	$\Xi^- 2\pi^+$		(2.9 ± 1.3) %		DESIG=3
Γ_{13}	$\Xi(1530)^0 \pi^+$	[a]	$< 2.9 \times10^{-3}$	CL=90%	DESIG=10
Γ_{14}	$\Xi(1620)^0 \pi^+$		seen		DESIG=24
Γ_{15}	$\Xi(1690)^0 \pi^+$		seen		DESIG=25
Γ_{16}	$\Xi^0 \pi^+ \pi^0$		(6.7 ± 3.5) %		DESIG=7
Γ_{17}	$\Xi^0 \pi^- 2\pi^+$		(5.0 ± 2.6) %		DESIG=12
Γ_{18}	$\Xi^0 e^+ \nu_e$		(7 ± 4) %		DESIG=5
Γ_{19}	$\Omega^- K^+ \pi^+$		$(2.0\pm1.5)\times10^{-3}$		DESIG=17
	Cabibbo-suppressed decays				NODE=S045;CLUMP=B
Γ_{20}	$p K^- \pi^+$		$(6.2\pm3.0)\times10^{-3}$	S=1.5	DESIG=13
Γ_{21}	$p \overline{K}^*(892)^0$	[a]	$(3.3\pm1.7)\times10^{-3}$		DESIG=14
Γ_{22}	$p \overline{K}_0^*(700)^0$, $\overline{K}_0^*(700)^0 \to K^- \pi^+$		$(5 \pm4)\times10^{-4}$		DESIG=41
Γ_{23}	$p \overline{K}^*(892)^0$, $\overline{K}^* \to K^- \pi^+$		$(1.8\pm0.8)\times10^{-3}$		DESIG=40
Γ_{24}	$p \overline{K}_0^*(1430)^0$, $\overline{K}_0^*(1430)^0 \to K^- \pi^+$		$(10 \pm6)\times10^{-4}$		DESIG=42
Γ_{25}	$\Delta(1232)^{++} K^-$, $\Delta(1232)^{++} \to p\pi^+$		$(1.1\pm0.5)\times10^{-3}$		DESIG=37
Γ_{26}	$\Delta(1600)^{++} K^-$, $\Delta(1600)^{++} \to p\pi^+$		$(2.7\pm1.5)\times10^{-4}$		DESIG=38
Γ_{27}	$\Delta(1700)^{++} K^-$, $\Delta(1700)^{++} \to p\pi^+$		$(1.2\pm0.7)\times10^{-4}$		DESIG=39
Γ_{28}	$\Lambda(1405)\pi^+$, $\Lambda(1405) \to pK^-$		$(2.0\pm1.4)\times10^{-4}$		DESIG=32
Γ_{29}	$\Lambda(1520)\pi^+$, $\Lambda(1520) \to pK^-$		$(1.6\pm0.8)\times10^{-4}$		DESIG=33
Γ_{30}	$\Lambda(1670)\pi^+$, $\Lambda(1670) \to pK^-$		$(1.9\pm0.9)\times10^{-4}$		DESIG=34
Γ_{31}	$\Lambda(1820)\pi^+$, $\Lambda(1820) \to pK^-$		$(5.1\pm2.7)\times10^{-5}$		DESIG=35
Γ_{32}	$\Lambda(2000)\pi^+$, $\Lambda(2000) \to pK^-$		$(4.6\pm2.3)\times10^{-4}$		DESIG=36
Γ_{33}	$p K_S^0$		$(7.1\pm3.2)\times10^{-4}$		DESIG=29
Γ_{34}	$\Lambda \pi^+$		$(4.5\pm2.0)\times10^{-4}$		DESIG=30
Γ_{35}	$\Sigma^+ \pi^+ \pi^-$		(1.4 ± 0.8) %		DESIG=22
Γ_{36}	$\Sigma^- 2\pi^+$		$(5.1\pm3.4)\times10^{-3}$		DESIG=23
Γ_{37}	$\Sigma^+ K^+ K^-$		$(4.3\pm2.5)\times10^{-3}$		DESIG=18
Γ_{38}	$\Sigma^+ \phi$	[a]	$< 3.2 \times10^{-3}$	CL=90%	DESIG=19
Γ_{39}	$\Xi(1690)^0 K^+$, $\Xi^0 \to \Sigma^+ K^-$		$< 1.3 \times10^{-3}$	CL=90%	DESIG=20
Γ_{40}	$\Sigma^0 \pi^+$		$(1.2\pm0.5)\times10^{-3}$		DESIG=31
Γ_{41}	$\Xi^0 K^+$		$(4.9\pm2.3)\times10^{-4}$		DESIG=28
Γ_{42}	$p \phi(1020)$		$(1.2\pm0.6)\times10^{-4}$		DESIG=26

[a] This branching fraction includes all the decay modes of the final-state resonance.

LINKAGE=SAD

Ξ_c^+ BRANCHING RATIOS

NODE=S045220

Cabibbo-favored ($S = -2$) decays

NODE=S045305

$\Gamma(p 2 K_S^0)/\Gamma(\Xi^- 2\pi^+)$ — Γ_1/Γ_{12}

NODE=S045R23
NODE=S045R23

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.087±0.016±0.014	168 ± 27	LESIAK	05	BELL	$e^+ e^-$, $\Upsilon(4S)$

$\Gamma(\Sigma(1385)^+ \overline{K}^0)/\Gamma(\Xi^- 2\pi^+)$ — Γ_3/Γ_{12}

NODE=S045R18

Unseen decay modes of the $\Sigma(1385)^+$ are included.

NODE=S045R18
NODE=S045R18

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
1.00±0.49±0.24	20	LINK	03E	FOCS	$<$ 1.72, 90% CL

$\Gamma(\Lambda K^- 2\pi^+)/\Gamma(\Xi^- 2\pi^+)$ — Γ_4/Γ_{12}

NODE=S045R8
NODE=S045R8

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.323±0.033 OUR AVERAGE					
0.32 ±0.03 ±0.02	1177 ± 55	LESIAK	05	BELL	$e^+ e^-$, $\Upsilon(4S)$
0.28 ±0.06 ±0.06	58	LINK	03E	FOCS	γ nucleus, $\overline{E}_\gamma \approx$ 180 GeV
0.58 ±0.16 ±0.07	61	BERGFELD	96	CLE2	$e^+ e^- \approx \Upsilon(4S)$

$\Gamma(\Lambda \overline{K}^*(892)^0 \pi^+)/\Gamma(\Lambda K^- 2\pi^+)$ — Γ_5/Γ_4

NODE=S045R9

Unseen decay modes of the $\overline{K}^*(892)^0$ are included.

NODE=S045R9
NODE=S045R9

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.5	90	BERGFELD	96	CLE2	$e^+ e^- \approx \Upsilon(4S)$

$\Gamma(\Sigma(1385)^+ K^- \pi^+)/\Gamma(\Lambda K^- 2\pi^+)$ — Γ_6/Γ_4

NODE=S045R10

Unseen decay modes of the $\Sigma(1385)^+$ are included.

NODE=S045R10
NODE=S045R10

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.7	90	BERGFELD	96	CLE2	$e^+ e^- \approx \Upsilon(4S)$

$\Gamma(\Sigma^+ K_S^0)/\Gamma(\Xi^- 2\pi^+)$ — Γ_7/Γ_{12}

NODE=S045R06
NODE=S045R06

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
6.7±0.7±0.3	0.47k	ADACHI	25T	BEL2	$e^+ e^-$ at Υ(nS)

$\Gamma(\Sigma^+ K^- \pi^+)/\Gamma(\Xi^- 2\pi^+)$ — Γ_8/Γ_{12}

NODE=S045R4
NODE=S045R4

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.94±0.10 OUR AVERAGE					
0.91±0.11±0.04	251	LINK	03E	FOCS	γ nucleus, $\overline{E}_\gamma \approx$ 180 GeV
0.92±0.20±0.07		[1] JUN	00	SELX	Σ^- nucleus, 600 GeV
1.18±0.26±0.17	119	BERGFELD	96	CLE2	$e^+ e^- \approx \Upsilon(4S)$

[1] This JUN 00 result is redundant with other results given below.

NODE=S045R4;LINKAGE=A

$\Gamma(\Sigma^+ \overline{K}^*(892)^0)/\Gamma(\Xi^- 2\pi^+)$ — Γ_9/Γ_{12}

NODE=S045R6

Unseen decay modes of the $\overline{K}^*(892)^0$ are included.

NODE=S045R6
NODE=S045R6

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.81±0.15 OUR AVERAGE					
0.78±0.16±0.06	119	LINK	03E	FOCS	γ nucleus, $\overline{E}_\gamma \approx$ 180 GeV
0.92±0.27±0.14	61	BERGFELD	96	CLE2	$e^+ e^- \approx \Upsilon(4S)$

$\Gamma(\Sigma^0 K^- 2\pi^+)/\Gamma(\Lambda K^- 2\pi^+)$ — Γ_{10}/Γ_4

NODE=S045R2
NODE=S045R2

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.84±0.36	47	[1] COTEUS	87	SPEC	nA $\simeq$ 600 GeV

[1] See, however, the note on the COTEUS 87 Ξ_c^+ mass measurement.

NODE=S045R2;LINKAGE=A

$\Gamma(\Xi^0 \pi^+)/\Gamma(\Xi^- 2\pi^+)$ — Γ_{11}/Γ_{12}

NODE=S045R12
NODE=S045R12
NEW

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.252±0.011 OUR AVERAGE					
[0.55 ± 0.16 OUR 2025 AVERAGE]					
0.251±0.005±0.010	4.3k	ADACHI	25T	BEL2	$e^+ e^-$ at Υ(nS)
0.55 ±0.13 ±0.09	39	EDWARDS	96	CLE2	$e^+ e^- \approx \Upsilon(4S)$

$\Gamma(\Xi^- 2\pi^+)/\Gamma_{total}$ Γ_{12}/Γ

NODE=S045R3
NODE=S045R3

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
2.86±1.21±0.38	24	[1] LI	19C	BELL	$e^+e^- \approx \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
seen	131	BERGFELD	96	CLE2	$e^+e^- \approx \Upsilon(4S)$
seen	160	AVERY	95	CLE2	$e^+e^- \approx \Upsilon(4S)$
seen	30	FRABETTI	93B	E687	γBe, $\overline{E}_\gamma$= 220 GeV
seen	30	ALBRECHT	90F	ARG	e^+e^- at $\Upsilon(4S)$
seen	23	ALAM	89	CLEO	e^+e^- 10.6 GeV

[1] LI 19C report a significance of 6.8 σ for the observation of this decay mode, observed in Ξ_c^+ from $\overline{B}^0 \to \overline{\Lambda}_c^- \Xi_c^+$.

NODE=S045R3;LINKAGE=A

$\Gamma(\Xi(1530)^0\pi^+)/\Gamma(\Xi^- 2\pi^+)$ Γ_{13}/Γ_{12}

NODE=S045R11

Unseen decay modes of the $\Xi(1530)^0$ are included.

NODE=S045R11
NODE=S045R11

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.1	90	LINK	03E	FOCS	γ nucleus, $\overline{E}_\gamma \approx$ 180 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.2	90	BERGFELD	96	CLE2	$e^+e^- \approx \Upsilon(4S)$

$\Gamma(\Xi(1620)^0\pi^+)/\Gamma_{total}$ Γ_{14}/Γ

NODE=S045R00
NODE=S045R00

VALUE	DOCUMENT ID		TECN	COMMENT
seen	SUMIHAMA	19	BELL	e^+e^- mostly at $\Upsilon(4S)$

$\Gamma(\Xi(1690)^0\pi^+)/\Gamma_{total}$ Γ_{15}/Γ

NODE=S045R01
NODE=S045R01

VALUE	DOCUMENT ID		TECN	COMMENT
seen	SUMIHAMA	19	BELL	e^+e^- mostly at $\Upsilon(4S)$

$\Gamma(\Xi^0\pi^+\pi^0)/\Gamma(\Xi^- 2\pi^+)$ Γ_{16}/Γ_{12}

NODE=S045R7
NODE=S045R7

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
2.34±0.57±0.37	81	EDWARDS	96	CLE2	$e^+e^- \approx \Upsilon(4S)$

$\Gamma(\Xi(1530)^0\pi^+)/\Gamma(\Xi^0\pi^+\pi^0)$ Γ_{13}/Γ_{16}

NODE=S045R13
NODE=S045R13

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.3	90	EDWARDS	96	CLE2	$e^+e^- \approx \Upsilon(4S)$

$\Gamma(\Xi^0\pi^- 2\pi^+)/\Gamma(\Xi^- 2\pi^+)$ Γ_{17}/Γ_{12}

NODE=S045R14
NODE=S045R14

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
1.74±0.42±0.27	57	EDWARDS	96	CLE2	$e^+e^- \approx \Upsilon(4S)$

$\Gamma(\Xi^0 e^+\nu_e)/\Gamma(\Xi^- 2\pi^+)$ Γ_{18}/Γ_{12}

NODE=S045R5
NODE=S045R5

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
$2.3\pm0.6^{+0.3}_{-0.6}$	41	ALEXANDER	95B	CLE2	$e^+e^- \approx \Upsilon(4S)$

$\Gamma(\Omega^- K^+\pi^+)/\Gamma(\Xi^- 2\pi^+)$ Γ_{19}/Γ_{12}

NODE=S045R19
NODE=S045R19

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.07±0.03±0.03	14	LINK	03E	FOCS	< 0.12, 90% CL

Cabibbo-suppressed decays

NODE=S045310

$\Gamma(pK^-\pi^+)/\Gamma_{total}$ Γ_{20}/Γ

NODE=S045R05
NODE=S045R05

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
6.2 ±3.0 OUR AVERAGE Error includes scale factor of 1.5.					
11.35±0.02±3.87	1.6M	[1] AAIJ	20AH	LHCB	pp at 13 TeV
4.5 ±2.1 ±0.7	24	[2] LI	19C	BELL	$e^+e^- \approx \Upsilon(4S)$

[1] AAIJ 20AH extracts B($\Xi_c^+ \to pK^-\pi^+$) assuming production fraction ratios $f_{\Xi_c^0}/f_{\Lambda_c^+}$ = (9.7 ± 0.9 ± 3.1) × 10^{-2} (from AAIJ 19AB plus heavy quark symmetry arguments) as well as $f_{\Xi_c^0}/f_{\Xi_c^+}$ = 1.00 ± 0.01, and uses the input B($\Lambda_c^+ \to pK^-\pi^+$) = (6.23 ± 0.33) × 10^{-2}. Its correlation with B($\Xi_c^0 \to \Lambda_c^+\pi^-$), as measured in AAIJ 20AH, is 0.414.

NODE=S045R05;LINKAGE=B

[2] LI 19C report a significance of 4.4 σ for the observation of this decay mode, observed in Ξ_c^+ from $\overline{B}^0 \to \overline{\Lambda}_c^- \Xi_c^+$.

NODE=S045R05;LINKAGE=A

$\Gamma(pK^-\pi^+)/\Gamma(\Xi^-2\pi^+)$ — Γ_{20}/Γ_{12}

NODE=S045R16

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.21 ±0.04 OUR AVERAGE					
0.194±0.054	47 ± 11	VAZQUEZ-JA...08		SELX	Σ^- nucleus, 600 GeV
0.234±0.047±0.022	202	LINK	01B	FOCS	γ nucleus
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.20 ±0.04 ±0.02	76	JUN	00	SELX	See VAZQUEZ-JAUREGUI 08

$\Gamma(p\overline{K}^*(892)^0)/\Gamma(pK^-\pi^+)$ — Γ_{21}/Γ_{20}

NODE=S045R17

Unseen decay modes of the $\overline{K}^*(892)^0$ are included.

VALUE	DOCUMENT ID		TECN	COMMENT
0.54±0.09±0.05	LINK	01B	FOCS	γ nucleus

$\Gamma(p\overline{K}^*_0(700)^0,\ \overline{K}^*_0(700)^0 \to K^-\pi^+)/\Gamma(pK^-\pi^+)$ — Γ_{22}/Γ_{20}

NODE=S045R27

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
7.4±0.4±0.7±4.8	187k	[1] AAIJ	25AL	LHCB	pp at 7, 8, 13 TeV

[1] Amplitude analysis of 20 resonance modes, the third uncertainty is due to the amplitude model. We report those only those fit fractions that are either large or incompatible with zero at approximately at least 2σ significance, and whose interpretation is not subject to large interference effects.

NODE=S045R27;LINKAGE=A

$\Gamma(p\overline{K}^*(892)^0,\ \overline{K}^* \to K^-\pi^+)/\Gamma(pK^-\pi^+)$ — Γ_{23}/Γ_{20}

NODE=S045R28

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
28.61±0.28±0.80±0.82	187k	[1] AAIJ	25AL	LHCB	pp at 7, 8, 13 TeV

[1] Amplitude analysis of 20 resonance modes, the third uncertainty is due to the amplitude model. We report those only those fit fractions that are either large or incompatible with zero at approximately at least 2σ significance, and whose interpretation is not subject to large interference effects.

NODE=S045R28;LINKAGE=A

$\Gamma(p\overline{K}^*_0(1430)^0,\ \overline{K}^*_0(1430)^0 \to K^-\pi^+)/\Gamma(pK^-\pi^+)$ — Γ_{24}/Γ_{20}

NODE=S045R29

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
15.6±0.7±1.9±7.1	187k	[1] AAIJ	25AL	LHCB	pp at 7, 8, 13 TeV

[1] Amplitude analysis of 20 resonance modes, the third uncertainty is due to the amplitude model. We report those only those fit fractions that are either large or incompatible with zero at approximately at least 2σ significance, and whose interpretation is not subject to large interference effects.

NODE=S045R29;LINKAGE=A

$\Gamma(\Delta(1232)^{++}K^-,\ \Delta(1232)^{++} \to p\pi^+)/\Gamma(pK^-\pi^+)$ — Γ_{25}/Γ_{20}

NODE=S045R30

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
17.2±0.4±0.5±1.3	187k	[1] AAIJ	25AL	LHCB	pp at 7, 8, 13 TeV

[1] Amplitude analysis of 20 resonance modes, the third uncertainty is due to the amplitude model. We report those only those fit fractions that are either large or incompatible with zero at approximately at least 2σ significance, and whose interpretation is not subject to large interference effects.

NODE=S045R30;LINKAGE=A

$\Gamma(\Delta(1600)^{++}K^-,\ \Delta(1600)^{++} \to p\pi^+)/\Gamma(pK^-\pi^+)$ — Γ_{26}/Γ_{20}

NODE=S045R31

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
4.31±0.27±0.91±0.96	187k	[1] AAIJ	25AL	LHCB	pp at 7, 8, 13 TeV

[1] Amplitude analysis of 20 resonance modes, the third uncertainty is due to the amplitude model. We report those only those fit fractions that are either large or incompatible with zero at approximately at least 2σ significance, and whose interpretation is not subject to large interference effects.

NODE=S045R31;LINKAGE=A

$\Gamma(\Delta(1700)^{++}K^-,\ \Delta(1700)^{++} \to p\pi^+)/\Gamma(pK^-\pi^+)$ — Γ_{27}/Γ_{20}

NODE=S045R32

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
2.01±0.17±0.15±0.44	187k	[1] AAIJ	25AL	LHCB	pp at 7, 8, 13 TeV

[1] Amplitude analysis of 20 resonance modes, the third uncertainty is due to the amplitude model. We report those only those fit fractions that are either large or incompatible with zero at approximately at least 2σ significance, and whose interpretation is not subject to large interference effects.

NODE=S045R32;LINKAGE=A

$\Gamma(\Lambda(1405)\pi^+,\ \Lambda(1405) \to pK^-)/\Gamma(pK^-\pi^+)$ — Γ_{28}/Γ_{20}

NODE=S045R33

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
3.3±0.2±0.2±1.5	187k	[1] AAIJ	25AL	LHCB	pp at 7, 8, 13 TeV

[1] Amplitude analysis of 20 resonance modes, the third uncertainty is due to the amplitude model. We report those only those fit fractions that are either large or incompatible with zero at approximately at least 2σ significance, and whose interpretation is not subject to large interference effects.

NODE=S045R33;LINKAGE=A

$\Gamma(\Lambda(1520)\pi^+,\ \Lambda(1520) \to pK^-)/\Gamma(pK^-\pi^+)$ Γ_{29}/Γ_{20}

NODE=S045R34
NODE=S045R34

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
2.64±0.08±0.04±0.11	187k	[1] AAIJ	25AL	LHCB	pp at 7, 8, 13 TeV

[1] Amplitude analysis of 20 resonance modes, the third uncertainty is due to the amplitude model. We report those only those fit fractions that are either large or incompatible with zero at approximately at least 2σ significance, and whose interpretation is not subject to large interference effects.

NODE=S045R34;LINKAGE=A

$\Gamma(\Lambda(1670)\pi^+,\ \Lambda(1670) \to pK^-)/\Gamma(pK^-\pi^+)$ Γ_{30}/Γ_{20}

NODE=S045R35
NODE=S045R35

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
3.03±0.09±0.11±0.17	187k	[1] AAIJ	25AL	LHCB	pp at 7, 8, 13 TeV

[1] Amplitude analysis of 20 resonance modes, the third uncertainty is due to the amplitude model. We report those only those fit fractions that are either large or incompatible with zero at approximately at least 2σ significance, and whose interpretation is not subject to large interference effects.

NODE=S045R35;LINKAGE=A

$\Gamma(\Lambda(1820)\pi^+,\ \Lambda(1820) \to pK^-)/\Gamma(pK^-\pi^+)$ Γ_{31}/Γ_{20}

NODE=S045R36
NODE=S045R36

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
0.82±0.09±0.08±0.14	187k	[1] AAIJ	25AL	LHCB	pp at 7, 8, 13 TeV

[1] Amplitude analysis of 20 resonance modes, the third uncertainty is due to the amplitude model. We report those only those fit fractions that are either large or incompatible with zero at approximately at least 2σ significance, and whose interpretation is not subject to large interference effects.

NODE=S045R36;LINKAGE=A

$\Gamma(\Lambda(2000)\pi^+,\ \Lambda(2000) \to pK^-)/\Gamma(pK^-\pi^+)$ Γ_{32}/Γ_{20}

NODE=S045R37
NODE=S045R37

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
7.4±0.3±0.8±1.1	187k	[1] AAIJ	25AL	LHCB	pp at 7, 8, 13 TeV

[1] Amplitude analysis of 20 resonance modes, the third uncertainty is due to the amplitude model. We report those only those fit fractions that are either large or incompatible with zero at approximately at least 2σ significance, and whose interpretation is not subject to large interference effects.

NODE=S045R37;LINKAGE=A

$\Gamma(pK^0_S)/\Gamma(\Xi^- 2\pi^+)$ Γ_{33}/Γ_{12}

NODE=S045R08
NODE=S045R08

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
2.47±0.16±0.07	1.5k	ADACHI	25N	BEL2	e^+e^- at $\Upsilon(nS)$

$\Gamma(\Lambda\pi^+)/\Gamma(\Xi^- 2\pi^+)$ Γ_{34}/Γ_{12}

NODE=S045R09
NODE=S045R09

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.56±0.14±0.09	0.8k	ADACHI	25N	BEL2	e^+e^- at $\Upsilon(nS)$

$\Gamma(\Sigma^+\pi^+\pi^-)/\Gamma(\Xi^- 2\pi^+)$ Γ_{35}/Γ_{12}

NODE=S045R24
NODE=S045R24

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.48±0.20	21 ± 8	VAZQUEZ-JA...	08	SELX	Σ^- nucleus, 600 GeV

$\Gamma(\Sigma^- 2\pi^+)/\Gamma(\Xi^- 2\pi^+)$ Γ_{36}/Γ_{12}

NODE=S045R25
NODE=S045R25

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.18±0.09	10 ± 4	VAZQUEZ-JA...	08	SELX	Σ^- nucleus, 600 GeV

$\Gamma(\Sigma^+K^+K^-)/\Gamma(\Sigma^+K^-\pi^+)$ Γ_{37}/Γ_8

NODE=S045R20
NODE=S045R20

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.16±0.06±0.01	17	LINK	03E	FOCS	γ nucleus, $\overline{E}_\gamma \approx$ 180 GeV

$\Gamma(\Sigma^+\phi)/\Gamma(\Sigma^+K^-\pi^+)$ Γ_{38}/Γ_8

NODE=S045R21

Unseen decay modes of the ϕ are included.

NODE=S045R21
NODE=S045R21

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.12	90	LINK	03E	FOCS	γ nucleus, $\overline{E}_\gamma \approx$ 180 GeV

$\Gamma(\Sigma^0\pi^+)/\Gamma(\Xi^- 2\pi^+)$ Γ_{40}/Γ_{12}

NODE=S045R26
NODE=S045R26

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
4.13±0.26±0.22	0.9k	ADACHI	25N	BEL2	e^+e^- at $\Upsilon(nS)$

$\Gamma(\Xi(1690)^0K^+ \times B(\Xi(1690)^0 \to \Sigma^+K^-))/\Gamma(\Sigma^+K^-\pi^+)$ Γ_{39}/Γ_8

NODE=S045R22
NODE=S045R22

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.05	90	LINK	03E	FOCS	γ nucleus, $\overline{E}_\gamma \approx$ 180 GeV

$\Gamma(\Xi^0 K^+)/\Gamma(\Xi^- 2\pi^+)$ — Γ_{41}/Γ_{12}

NODE=S045R07
NODE=S045R07

VALUE (units 10^{-2})	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
1.7±0.3±0.1	0.24k	ADACHI	25T	BEL2	$e^+ e^-$ at Υ(nS)

$\Gamma(p\phi(1020))/\Gamma(pK^-\pi^+)$ — Γ_{42}/Γ_{20}

NODE=S045R04
NODE=S045R04

VALUE (units 10^{-3})	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
19.8±0.7±0.9±0.2	3.4k	[1] AAIJ	19I	LHCB	pp at 8 TeV

[1] The last uncertainty is due to the uncertainty in the $\phi \rightarrow K^+ K^-$ branching fraction.

NODE=S045R04;LINKAGE=A

Ξ_c^+ REFERENCES

NODE=S045

AAIJ	25AL	PR D112 092003	R. Aaij *et al.*	(LHCb Collab.)	REFID=63683
ADACHI	25N	JHEP 2503 061	I. Adachi *et al.*	(BELLE and BELLE II Collab.)	REFID=63451
ADACHI	25T	JHEP 2508 195	I. Adachi *et al.*	(BELLE and BELLE II Collab.)	REFID=63549
AAIJ	20AH	PR D102 071101	R. Aaij *et al.*	(LHCb Collab.)	REFID=60723
AAIJ	19AB	PR D99 052006	R. Aaij *et al.*	(LHCb Collab.)	REFID=59843
AAIJ	19AG	PR D100 032001	R. Aaij *et al.*	(LHCb Collab.)	REFID=59957
AAIJ	19I	JHEP 1904 084	R. Aaij *et al.*	(LHCb Collab.)	REFID=59671
LI	19C	PR D100 031101	Y.B. Li *et al.*	(BELLE Collab.)	REFID=59906
SUMIHAMA	19	PRL 122 072501	M. Sumihama *et al.*	(BELLE Collab.)	REFID=59594
AAIJ	14Z	PRL 113 032001	R. Aaij *et al.*	(LHCb Collab.)	REFID=55842
AALTONEN	14B	PR D89 072014	T. Aaltonen *et al.*	(CDF Collab.)	REFID=55804
VAZQUEZ-JA...	08	PL B666 299	E. Vazquez-Jauregui *et al.*	(SELEX Collab.)	REFID=52465
LESIAK	05	PL B605 237	T. Lesiak *et al.*	(BELLE Collab.)	REFID=50383
Also		PL B617 198 (errat.)	T. Lesiak *et al.*	(BELLE Collab.)	REFID=50652
LINK	03E	PL B571 139	J.M. Link *et al.*	(FNAL FOCUS Collab.)	REFID=49532
MAHMOOD	02	PR D65 031102	A.H. Mahmood *et al.*	(CLEO Collab.)	REFID=48513
LINK	01B	PL B512 277	J.M. Link *et al.*	(FNAL FOCUS Collab.)	REFID=48174
LINK	01D	PL B523 53	J.M. Link *et al.*	(FNAL FOCUS Collab.)	REFID=48475
JUN	00	PRL 84 1857	S.Y. Jun *et al.*	(FNAL SELEX Collab.)	REFID=47502
FRABETTI	98	PL B427 211	P.L. Frabetti *et al.*	(FNAL E687 Collab.)	REFID=46057
BERGFELD	96	PL B365 431	T. Bergfeld *et al.*	(CLEO Collab.)	REFID=44624
EDWARDS	96	PL B373 261	K.W. Edwards *et al.*	(CLEO Collab.)	REFID=44672
ALEXANDER	95B	PRL 74 3113	J. Alexander *et al.*	(CLEO Collab.)	REFID=44197
Also		PRL 75 4155 (errat.)	J. Alexander *et al.*	(CLEO Collab.)	REFID=44579
AVERY	95	PRL 75 4364	P. Avery *et al.*	(CLEO Collab.)	REFID=44563
FRABETTI	93B	PRL 70 1381	P.L. Frabetti *et al.*	(FNAL E687 Collab.)	REFID=43213
ALBRECHT	90F	PL B247 121	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=41339
ALAM	89	PL B226 401	M.S. Alam *et al.*	(CLEO Collab.)	REFID=40745
BARLAG	89C	PL B233 522	S. Barlag *et al.*	(ACCMOR Collab.)	REFID=41117
COTEUS	87	PRL 59 1530	P. Coteus *et al.*	(FNAL E400 Collab.)	REFID=40131
BIAGI	85C	PL 150B 230	S.F. Biagi *et al.*	(CERN WA62 Collab.)	REFID=12148
BIAGI	83	PL 122B 455	S.F. Biagi *et al.*	(CERN WA62 Collab.)	REFID=12147