

$\Xi_c(2930)$  $I(J^P) = ?(?^?)$  Status: \*\*

OMITTED FROM SUMMARY TABLE

 $\Xi_c(2930)$  MASSES $\Xi_c(2930)^+$  MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b>2942.3 ± 4.4 ± 1.5</b>	21	LI	18D	BELL $e^+e^-$ at $\Upsilon(4S)$

 $\Xi_c(2930)^0$  MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b>2938.55 ± 0.30 OUR AVERAGE</b>				
2938.5 ± 0.9 ± 2.3	1.5k	<sup>1</sup> AAIJ	23X	LHCB $B^- \rightarrow \Lambda_c^+ \bar{\Lambda}_c^- K^-$
2938.55 ± 0.21 ± 0.22	10.4k	<sup>2</sup> AAIJ	20X	LHCB $pp$ at 13 TeV
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
2928.9 ± 3.0 <sup>+0.9</sup> / <sub>-12.0</sub>	61	LI	18A	BELL $e^+e^-$ at $\Upsilon(4S)$
2931 ± 3 ± 5	34	AUBERT	08H	BABR $\Upsilon(4S) \rightarrow B\bar{B}$

<sup>1</sup> AAIJ 23X studies the  $\Lambda_c^+ K^-$  system within  $B^- \rightarrow \Lambda_c^+ \bar{\Lambda}_c^- K^-$  decays.<sup>2</sup> AAIJ 20X uses a prompt  $\Lambda_c^+ K^-$  sample and reports  $2938.55 \pm 0.21 \pm 0.17 \pm 0.14$  MeV where the last uncertainty is due to the  $\Lambda_c^+$  mass. Observes that the broader resonance at 2930 MeV seen in  $B^- \rightarrow K^- \Lambda_c^+ \bar{\Lambda}_c^-$  by LI 18A and AUBERT 08H resolves into two narrower peaks at approximately 2939 MeV and 2923 MeV. $\Xi_c(2930)^+ - \Xi_c(2930)^0$  MASS DIFFERENCE

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
13.4 ± 5.3 <sup>+1.7</sup> / <sub>-12.1</sub>	21	<sup>1</sup> LI	18D	BELL $e^+e^-$ at $\Upsilon(4S)$

<sup>1</sup> This LI 18D value is not independent of the mass measurements. $\Xi_c(2930)$  WIDTHS $\Xi_c(2930)^+$  WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b>14.8 ± 8.8 ± 2.5</b>	21	LI	18D	BELL $e^+e^-$ at $\Upsilon(4S)$

 $\Xi_c(2930)^0$  WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b>10.2 ± 0.8 ± 1.1</b>	10.4k	<sup>1</sup> AAIJ	20X	LHCB $pp$ at 13 TeV
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
11.0 ± 1.9 ± 7.5	1.5k	<sup>2</sup> AAIJ	23X	LHCB $B^- \rightarrow \Lambda_c^+ \bar{\Lambda}_c^- K^-$
19.5 ± 8.4 <sup>+5.9</sup> / <sub>-7.9</sub>	61	LI	18A	BELL $e^+e^-$ at $\Upsilon(4S)$
36 ± 7 ± 11	34	AUBERT	08H	BABR $\Upsilon(4S) \rightarrow B\bar{B}$

- <sup>1</sup> AAIJ 20X uses a prompt  $\Lambda_c^+ K^-$  sample and observes that the broader resonance at 2930 MeV seen in  $B^- \rightarrow K^- \Lambda_c^+ \bar{\Lambda}_c^-$  by LI 18A and AUBERT 08H resolves into two narrower peaks at approximately 2939 MeV and 2923 MeV.
- <sup>2</sup> AAIJ 23X studies the  $\Lambda_c^+ K^-$  system within  $B^- \rightarrow \Lambda_c^+ \bar{\Lambda}_c^- K^-$  decays.

### $\Xi_c(2930)$ DECAY MODES

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1 \quad \Lambda_c^+ K^-$	seen
$\Gamma_2 \quad \Lambda_c^+ K_S^0$	seen

### $\Xi_c(2930)$ BRANCHING RATIOS

$\Gamma(\Lambda_c^+ K^-)/\Gamma_{\text{total}}$					$\Gamma_1/\Gamma$
VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	
<b>seen</b>	1.5k	AAIJ	23X	LHCB	$B^- \rightarrow \Lambda_c^+ \bar{\Lambda}_c^- K^-$
<b>seen</b>	10.4k	AAIJ	20X	LHCB	$pp$ at 13 TeV
seen	61	LI	18A	BELL	Significance 5.1 std
seen	34	AUBERT	08H	BABR	$e^+ e^-$ at $\Upsilon(4S)$

  

$\Gamma(\Lambda_c^+ K_S^0)/\Gamma_{\text{total}}$					$\Gamma_2/\Gamma$
VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	
<b>seen</b>	21	LI	18D	BELL	Significance 4.1 std

### $\Xi_c(2930)$ REFERENCES

AAIJ	23X	PR D108 012020	R. Aaij <i>et al.</i>	(LHCb Collab.)
AAIJ	20X	PRL 124 222001	R. Aaij <i>et al.</i>	(LHCb Collab.)
LI	18A	EPJ C78 252	Y.B. Li <i>et al.</i>	(BELLE Collab.)
LI	18D	EPJ C78 928	Y.B. Li <i>et al.</i>	(BELLE Collab.)
AUBERT	08H	PR D77 031101	B. Aubert <i>et al.</i>	(BABAR Collab.)