$\Xi_c(2970)$

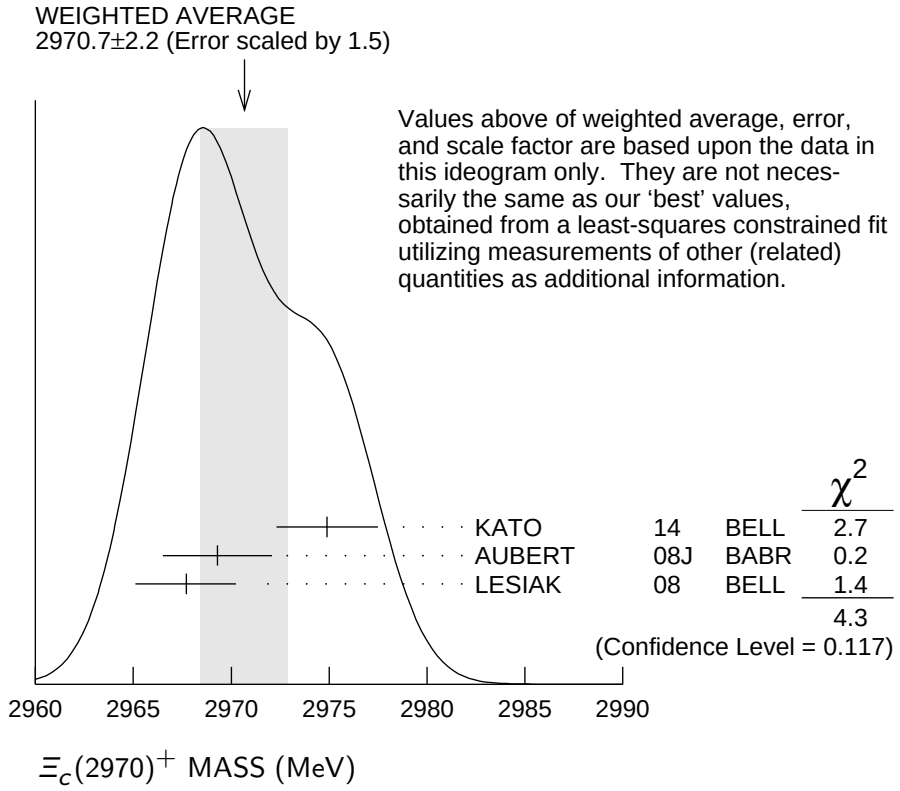
$I(J^P) = \frac{1}{2}(?^?)$ Status: ***

was $\Xi_c(2980)$

$\Xi_c(2970)$ MASSES

$\Xi_c(2970)^+$ MASS

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
2969.4±0.8 OUR FIT Error includes scale factor of 1.1.					
2970.7±2.2 OUR AVERAGE Error includes scale factor of 1.5. See the ideogram below.					
$2974.9 \pm 1.5 \pm 2.1$	244 ± 39	KATO	14	BELL	e^+e^- $\Upsilon(1S)$ to $\Upsilon(5S)$
$2969.3 \pm 2.2 \pm 1.7$	756 ± 206	AUBERT	08J	BABR	$e^+e^- \approx$ 10.58 GeV
$2967.7 \pm 2.3^{+1.1}_{-1.2}$	78 ± 13	LESIAK	08	BELL	$e^+e^- \approx \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$2978.5 \pm 2.1 \pm 2.0$	405 ± 51	CHISTOV	06	BELL	See KATO 14



$\Xi_c(2970)^0$ MASS

The evidence is statistically weaker for this charge state.

VALUE (MeV)	*EVTS*	*DOCUMENT ID*	*TECN*	*COMMENT*
$2967.8^{+0.9}_{-0.7}$ OUR FIT Error includes scale factor of 1.1.				
2968.0±2.6 OUR AVERAGE Error includes scale factor of 1.2.				
$2972.9\pm4.4\pm1.6$	67 ± 44	AUBERT	08J BABR	$e^+e^-\approx$ 10.58 GeV
$2965.7\pm2.4^{+1.1}_{-1.2}$	57 ± 13	LESIAK	08 BELL	$e^+e^-\approx\ \Upsilon(4S)$
$2977.1\pm8.8\pm3.5$	42 ± 24	CHISTOV	06 BELL	$e^+e^-\approx\ \Upsilon(4S)$

$\Xi_c(2970)\ -\ \Xi_c$ MASS DIFFERENCES

$m_{\Xi_c(2970)^+} - m_{\Xi_c^0}$

VALUE (MeV)	*EVTS*	*DOCUMENT ID*	*TECN*	*COMMENT*
498.5±0.8 OUR FIT Error includes scale factor of 1.1.				
498.1±0.8±0.2	916	YELTON	16 BELL	e^+e^-, Υ regions

$m_{\Xi_c(2970)^0} - m_{\Xi_c^+}$

VALUE (MeV)	*EVTS*	*DOCUMENT ID*	*TECN*	*COMMENT*
$499.9^{+0.8}_{-0.7}$ OUR FIT Error includes scale factor of 1.1.				
499.9±0.7±0.2	1443	YELTON	16 BELL	e^+e^-, Υ regions

$\Xi_c(2970)^+\ -\ \Xi_c(2970)^0$ MASS DIFFERENCE

VALUE (MeV)	*DOCUMENT ID*	*TECN*	*COMMENT*
$1.5^{+1.1}_{-1.2}$ OUR FIT Error includes scale factor of 1.1.			
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$-4.8\pm0.1\pm0.5$	YELTON	16 BELL	916 and 1443 evts

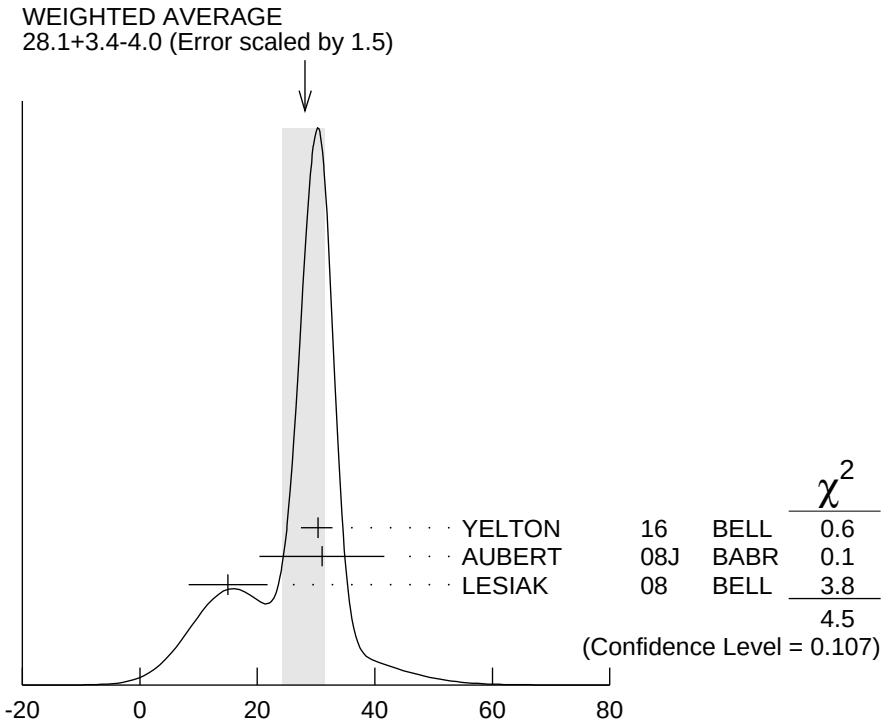
$\Xi_c(2970)$ WIDTHS

$\Xi_c(2970)^+$ WIDTH

VALUE (MeV)	*EVTS*	*DOCUMENT ID*	*TECN*	*COMMENT*
$20.9^{+2.4}_{-3.5}$ OUR AVERAGE Error includes scale factor of 1.2.				
$28.1\pm2.4^{+1.0}_{-5.0}$	916	YELTON	16 BELL	e^+e^-, Υ regions
$14.8\pm2.5\pm4.1$	244 ± 39	KATO	14 BELL	$e^+e^-\ \Upsilon(1S)$ to $\Upsilon(5S)$
$27\ \pm8\ \pm2$	756 ± 206	AUBERT	08J BABR	$e^+e^-\approx$ 10.58 GeV
$18\ \pm6\ \pm3$	78 ± 13	LESIAK	08 BELL	$e^+e^-\approx\ \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$43.5\pm7.5\pm7.0$	405 ± 51	CHISTOV	06 BELL	See KATO 14

$\Xi_c(2970)^0$ WIDTH

VALUE (MeV)	*EVTS*	*DOCUMENT ID*	*TECN*	*COMMENT*
$28.1^{+3.4}_{-4.0}$ OUR AVERAGE Error includes scale factor of 1.5. See the ideogram below.				
$30.3 \pm 2.3^{+1.0}_{-1.8}$	1443	YELTON	16 BELL	e^+e^-, Υ regions
$31 \pm 7 \pm 8$	67 ± 44	AUBERT	08J BABR	$e^+e^- \approx$ 10.58 GeV
$15 \pm 6 \pm 3$	57 ± 13	LESIAK	08 BELL	$e^+e^- \approx \Upsilon(4S)$



$\Xi_c(2970)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$\Lambda_c^+ \overline{K} \pi$	seen
Γ_2	$\Sigma_c(2455) \overline{K}$	seen
Γ_3	$\Lambda_c^+ \overline{K}$	not seen
Γ_4	$\Xi_c 2\pi$	seen
Γ_5	$\Xi_c' \pi$	seen
Γ_6	$\Xi_c(2645) \pi$	seen

$\Xi_c(2970)$ BRANCHING RATIOS

$\Gamma(\Lambda_c^+ \overline{K}\pi)/\Gamma_{\text{total}}$ Γ_1/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	AUBERT	08J	BABR	$e^+e^- \approx \Upsilon(4S)$
seen	CHISTOV	06	BELL	$e^+e^- \approx \Upsilon(4S)$

$\Gamma(\Sigma_c(2455)\overline{K})/\Gamma(\Lambda_c^+ \overline{K}\pi)$ Γ_2/Γ_1

VALUE	DOCUMENT ID		TECN	COMMENT
0.55±0.07±0.13	AUBERT	08J	BABR	$e^+e^- \approx \Upsilon(4S)$

$\Gamma(\Xi_c' \pi)/\Gamma_{\text{total}}$ Γ_5/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	YELTON	16	BELL	e^+e^-, Υ regions

$\Gamma(\Xi_c(2645)\pi)/\Gamma_{\text{total}}$ Γ_6/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	LESIAK	08	BELL	$e^+e^- \approx \Upsilon(4S)$

$\Xi_c(2970)$ REFERENCES

YELTON	16	PR D94 052011	J. Yelton *et al.*	(BELLE Collab.)
KATO	14	PR D89 052003	Y. Kato *et al.*	(BELLE Collab.)
AUBERT	08J	PR D77 012002	B. Aubert *et al.*	(BABAR Collab.)
LESIAK	08	PL B665 9	T. Lesiak *et al.*	(BELLE Collab.)
CHISTOV	06	PRL 97 162001	R. Chistov *et al.*	(BELLE Collab.)