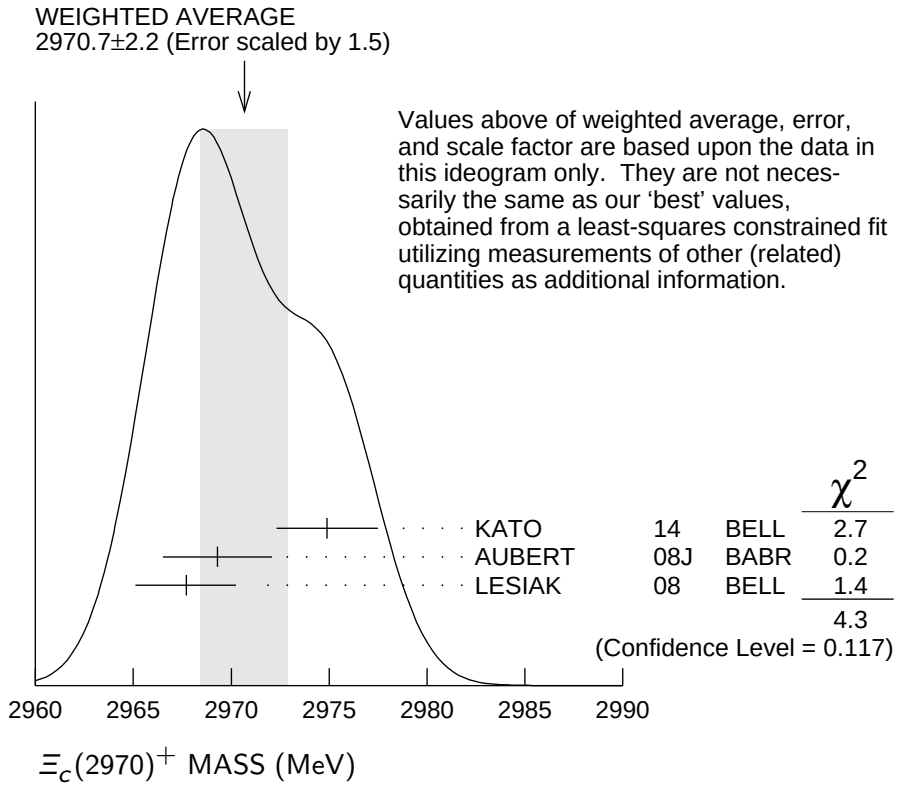
$\Xi_c(2970)$
was $\Xi_c(2980)$

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

$\Xi_c(2970)$ 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±1.5±2.1	244 ± 39	KATO	14	BELL	e^+e^- $\Upsilon(1S)$ to $\Upsilon(5S)$
2969.3±2.2±1.7	756 ± 206	AUBERT	08J	BABR	$e^+e^- \approx$ 10.58 GeV
$2967.7\pm2.3^{+1.1}_{-1.2}$	78 ± 13	LESIAK	08	BELL	$e^+e^- \approx \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2978.5±2.1±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±0.8 OUR FIT Error includes scale factor of 1.1.					
2968.0±2.6 OUR AVERAGE Error includes scale factor of 1.2.					
2972.9±4.4±1.6	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±8.8±3.5	42 ± 24	CHISTOV	06	BELL	$e^+e^- \approx \Upsilon(4S)$

$\Xi_c(2970)$ − Ξ_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
1.6±1.1 OUR FIT	Error includes scale factor of 1.1.			
• • • We do not use the following data for averages, fits, limits, etc. • • •				
−4.8±0.1±0.5	YELTON	16	BELL	916 and 1443 evts

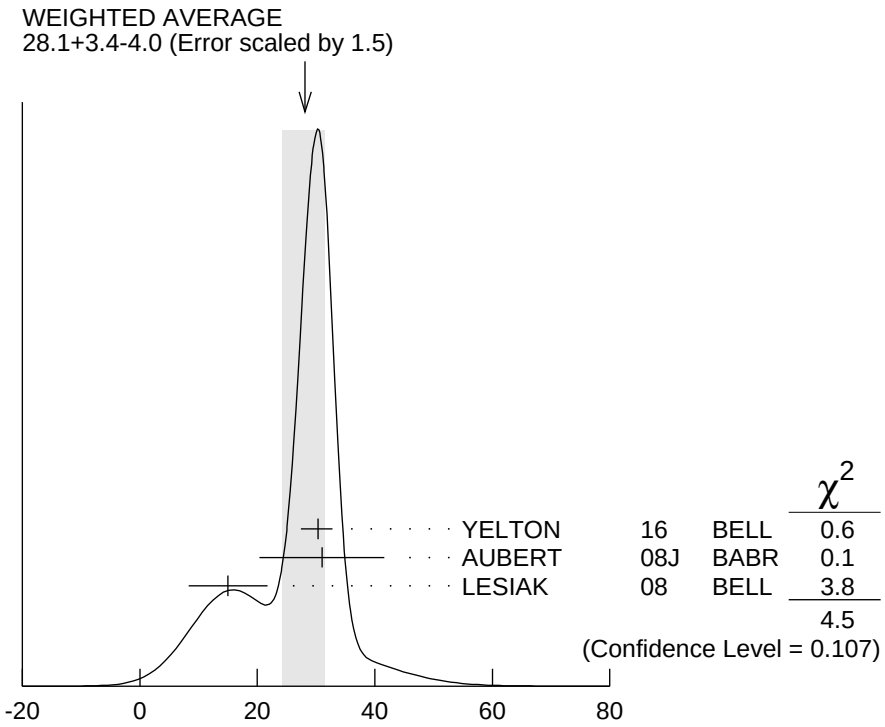
$\Xi_c(2970)$ WIDTHS

$\Xi_c(2970)^+$ 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±2.5±4.1	244 ± 39	KATO	14	BELL	e^+e^- $\Upsilon(1S)$ to $\Upsilon(5S)$
27 ±8 ±2	756 ± 206	AUBERT	08J	BABR	$e^+e^- \approx$ 10.58 GeV
18 ±6 ±3	78 ± 13	LESIAK	08	BELL	$e^+e^- \approx \Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
43.5±7.5±7.0	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.				
$30.3\pm2.3^{+1.0}_{-1.8}$	1443	YELTON	16	BELL	e^+e^-, Υ regions
31 ±7 ±8	67 ± 44	AUBERT	08J	BABR	$e^+e^- \approx$ 10.58 GeV
15 ±6 ±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	$\Xi_c(2645)\pi$	seen

$\Xi_c(2970)$ BRANCHING RATIOS

$\Gamma(\Lambda_c^+ \overline{K}\pi)/\Gamma_{total}$ 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	$e^+e^- \approx \Upsilon(4S)$

$\Gamma(\Xi_c(2645)\pi)/\Gamma_{total}$ Γ_5/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.)