

$\Xi(2500)$

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

OMITTED FROM SUMMARY TABLE

The ALITTI 69 peak might be instead the $\Xi(2370)$ or might be neither the $\Xi(2370)$ nor the $\Xi(2500)$.

$\Xi(2500)$ MASS

<u>VALUE (MeV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>	<u>COMMENT</u>
≈ 2500 OUR ESTIMATE					
2505 ± 10		JENKINS	83 MPS	—	$K^- p \rightarrow K^+$ MM
2430 ± 20	30	ALITTI	69 HBC	—	$K^- p$ 4.6–5 GeV/c
2500 ± 10	45	BARTSCH	69 HBC	–0	$K^- p$ 10 GeV/c

$\Xi(2500)$ WIDTH

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>
150 ⁺⁶⁰ _{–40}	ALITTI	69 HBC	—
59 ± 27	BARTSCH	69 HBC	–0

$\Xi(2500)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
$\Gamma_1 \quad \Xi \pi$	
$\Gamma_2 \quad \Lambda \bar{K}$	
$\Gamma_3 \quad \Sigma \bar{K}$	
$\Gamma_4 \quad \Xi \pi \pi$	seen
$\Gamma_5 \quad \Xi(1530) \pi$	
$\Gamma_6 \quad \Lambda \bar{K} \pi + \Sigma \bar{K} \pi$	seen

$\Xi(2500)$ BRANCHING RATIOS

$\frac{\Gamma(\Xi \pi)}{[\Gamma(\Xi \pi) + \Gamma(\Lambda \bar{K}) + \Gamma(\Sigma \bar{K}) + \Gamma(\Xi(1530) \pi)]}$	$\frac{\Gamma_1}{(\Gamma_1 + \Gamma_2 + \Gamma_3 + \Gamma_5)}$
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
<0.5	ALITTI 69 HBC 1 standard dev. limit
$\frac{\Gamma(\Lambda \bar{K})}{[\Gamma(\Xi \pi) + \Gamma(\Lambda \bar{K}) + \Gamma(\Sigma \bar{K}) + \Gamma(\Xi(1530) \pi)]}$	$\frac{\Gamma_2}{(\Gamma_1 + \Gamma_2 + \Gamma_3 + \Gamma_5)}$
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>CHG</u>
0.5 ± 0.2	ALITTI 69 HBC —
$\frac{\Gamma(\Sigma \bar{K})}{[\Gamma(\Xi \pi) + \Gamma(\Lambda \bar{K}) + \Gamma(\Sigma \bar{K}) + \Gamma(\Xi(1530) \pi)]}$	$\frac{\Gamma_3}{(\Gamma_1 + \Gamma_2 + \Gamma_3 + \Gamma_5)}$
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>CHG</u>
0.5 ± 0.2	ALITTI 69 HBC —

$$\frac{\Gamma(\Xi(1530)\pi)}{[\Gamma(\Xi\pi) + \Gamma(\Lambda\bar{K}) + \Gamma(\Sigma\bar{K}) + \Gamma(\Xi(1530)\pi)]} \quad \Gamma_5/(\Gamma_1+\Gamma_2+\Gamma_3+\Gamma_5)$$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<0.2	ALITTI	69 HBC	1 standard dev. limit

$$\Gamma(\Xi\pi\pi)/\Gamma_{\text{total}} \quad \Gamma_4/\Gamma$$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>
seen	BARTSCH	69 HBC	-0

$$[\Gamma(\Lambda\bar{K}\pi) + \Gamma(\Sigma\bar{K}\pi)]/\Gamma_{\text{total}} \quad \Gamma_6/\Gamma$$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>
seen	BARTSCH	69 HBC	-0

$\Xi(2500)$ REFERENCES

JENKINS	83	PRL 51 951	+Albright, Diamond+ (FSU, BRAN, LBL, CINC, MASD)
ALITTI	69	PRL 22 79	+Barnes, Flaminio, Metzger+ (BNL, SYRA) I
BARTSCH	69	PL 28B 439	+ (AACH, BERL, CERN, LOIC, VIEN)