# $\Xi(2500)$

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

| *VALUE* (MeV) | *EVTS* | *DOCUMENT ID* | | *TECN* | *CHG* | *COMMENT* |
|---|---|---|---|---|---|---|
| **≈ 2500 OUR ESTIMATE** | | | | | | |
| $2505 \pm 10$ | | JENKINS | 83 | MPS | – | $K^- p \to K^+$ MM |
| $2430 \pm 20$ | 30 | ALITTI | 69 | HBC | – | $K^- p$ 4.6–5 GeV/$c$ |
| $2500 \pm 10$ | 45 | BARTSCH | 69 | HBC | −0 | $K^- p$ 10 GeV/$c$ |

## $\Xi(2500)$ WIDTH

| *VALUE* (MeV) | *DOCUMENT ID* | | *TECN* | *CHG* |
|---|---|---|---|---|
| $150^{+60}_{-40}$ | ALITTI | 69 | HBC | – |
| $59 \pm 27$ | BARTSCH | 69 | HBC | −0 |

## $\Xi(2500)$ DECAY MODES

| | Mode | Fraction ($\Gamma_i/\Gamma$) |
|---|---|---|
| $\Gamma_1$ | $\Xi\pi$ | |
| $\Gamma_2$ | $\Lambda\overline{K}$ | |
| $\Gamma_3$ | $\Sigma\overline{K}$ | |
| $\Gamma_4$ | $\Xi\pi\pi$ | seen |
| $\Gamma_5$ | $\Xi(1530)\pi$ | |
| $\Gamma_6$ | $\Lambda\overline{K}\pi + \Sigma\overline{K}\pi$ | seen |

## $\Xi(2500)$ BRANCHING RATIOS

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

| *VALUE* | *DOCUMENT ID* | | *TECN* | *COMMENT* |
|---|---|---|---|---|
| $<0.5$ | ALITTI | 69 | HBC | 1 standard dev. limit |

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

| *VALUE* | *DOCUMENT ID* | | *TECN* | *CHG* |
|---|---|---|---|---|
| $0.5 \pm 0.2$ | ALITTI | 69 | HBC | – |

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

| *VALUE* | *DOCUMENT ID* | | *TECN* | *CHG* |
|---|---|---|---|---|
| $0.5 \pm 0.2$ | ALITTI | 69 | HBC | – |

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

| VALUE | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|
| $<0.2$ | ALITTI | 69 | HBC | 1 standard dev. limit |

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

| VALUE | DOCUMENT ID | | TECN | CHG |
|---|---|---|---|---|
| **seen** | BARTSCH | 69 | HBC | $-0$ |

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

| VALUE | DOCUMENT ID | | TECN | CHG |
|---|---|---|---|---|
| **seen** | BARTSCH | 69 | HBC | $-0$ |

## $\Xi(2500)$ REFERENCES


| | | | | |
|---|---|---|---|---|
| JENKINS | 83 | PRL 51 951 | C.M. Jenkins *et al.* | (FSU, BRAN, LBL+) |
| ALITTI | 69 | PRL 22 79 | J. Alitti *et al.* | (BNL, SYRA) I |
| BARTSCH | 69 | PL 28B 439 | J. Bartsch *et al.* | (AACH, BERL, CERN+) |