# $\Xi_{cc}^{+}$

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

OMITTED FROM SUMMARY TABLE

This would presumably be an isospin-1/2 particle, a $ccu$ $\Xi_{cc}^{++}$ and a $ccd$ $\Xi_{cc}^{+}$. However, opposed to the evidence cited below, the BABAR experiment has found no evidence for a $\Xi_{cc}^{+}$ in a search in $\Lambda_c^+ K^- \pi^+$ and $\Xi_c^0 \pi^+$ modes, and no evidence of a $\Xi_{cc}^{++}$ in $\Lambda_c^+ K^- \pi^+ \pi^+$ and $\Xi_c^0 \pi^+ \pi^+$ modes (AUBERT,B 06D). Nor has the BELLE experiment found any evidence for a $\Xi_{cc}^{+}$ in the $\Lambda_c^+ K^- \pi^+$ mode (CHISTOV 06).

## $\Xi_{cc}^{+}$ MASS

| *VALUE* (MeV) | *EVTS* | *DOCUMENT ID* | *TECN* | *COMMENT* |
|---|---|---|---|---|
| **3518.9±0.9 OUR AVERAGE** | | | | |
| 3518 ±3 | 6 | [1] OCHERASHVI..05 | SELX | $\Sigma^-$ nucleus ≈ 600 GeV |
| 3519 ±1 | 16 | [2] MATTSON 02 | SELX | $\Sigma^-$ nucleus ≈ 600 GeV |

[1] OCHERASHVILI 05 claims "an excess of 5.62 events over ... 1.38 ± 0.13 events" for a significance of 4.8 $\sigma$ in $p D^+ K^-$ events.

[2] MATTSON 02 claims "an excess of 15.9 events over an expected background of 6.1 ± 0.5 events, a statistical significance of 6.3 $\sigma$" in the $\Lambda_c^+ K^- \pi^+$ invariant-mass spectrum. The probability that the peak is a fluctuation increases from $1.0 \times 10^{-6}$ to $1.1 \times 10^{-4}$ when the number of bins searched is considered.

## $\Xi_{cc}^{+}$ MEAN LIFE

| *VALUE* ($10^{-15}$ s) | *CL%* | *DOCUMENT ID* | *TECN* | *COMMENT* |
|---|---|---|---|---|
| **<33** | 90 | MATTSON 02 | SELX | $\Sigma^-$ nucleus, ≈ 600 GeV |

## $\Xi_{cc}^{+}$ DECAY MODES

| | Mode |
|---|---|
| $\Gamma_1$ | $\Lambda_c^+ K^- \pi^+$ |
| $\Gamma_2$ | $p D^+ K^-$ |

### $\Gamma(p D^+ K^-)/\Gamma(\Lambda_c^+ K^- \pi^+)$ — $\Gamma_2/\Gamma_1$

| *VALUE* | *EVTS* | *DOCUMENT ID* | *TECN* | *COMMENT* |
|---|---|---|---|---|
| **0.36±0.21** | 6 | OCHERASHVI..05 | SELX | $\Sigma^-$ ≈ 600 GeV |

# $\Xi_{cc}^{+}$ REFERENCES


| | | | | |
|---|---|---|---|---|
| AUBERT,B | 06D | PR D74 011103R | B. Aubert *et al.* | (BABAR Collab.) |
| CHISTOV | 06 | PRL 97 162001 | R. Chistov *et al.* | (BELLE Collab.) |
| OCHERASHVI... | 05 | PL B628 18 | A. Ocherashvili *et al.* | (FNAL SELEX Collab.) |
| MATTSON | 02 | PRL 89 112001 | M. Mattson *et al.* | (FNAL SELEX Collab.) |