Ξ_{cc}^+

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

OMITTED FROM SUMMARY TABLE

This would presumably be an isospin-1/2 particle, a ccu Ξ_{cc}^{++} and a ccd Ξ_{cc}^{+}. However, opposed to the evidence cited below, the BABAR experiment has found no evidence for a Ξ_{cc}^+ in a search in $\Lambda_c^+ K^- \pi^+$ and $\Xi_c^0 \pi^+$ modes, and no evidence of a Ξ_{cc}^{++} in $\Lambda_c^+ K^- \pi^+ \pi^+$ and $\Xi_c^0 \pi^+ \pi^+$ modes (AUBERT,B 06D). Nor have the BELLE (CHISTOV 06, KATO 14) or LHCb (AAIJ 13CD) experiments found any evidence for this state.

Ξ_{cc}^+ MASS

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
3518.9±0.9 OUR AVERAGE					
3518 ±3	6	[1] OCHERASHVI..05		SELX	Σ^- nucleus ≈ 600 GeV
3519 ±1	16	[2] MATTSON	02	SELX	Σ^- 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 σ in pD^+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 σ" in the $\Lambda_c^+ K^- \pi^+$ invariant-mass spectrum. The probability that the peak is a fluctuation increases from 1.0×10^{-6} to 1.1×10^{-4} when the number of bins searched is considered.

Ξ_{cc}^+ MEAN LIFE

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

Ξ_{cc}^+ DECAY MODES

	Mode
Γ_1	$\Lambda_c^+ K^- \pi^+$
Γ_2	pD^+K^-

$\Gamma(pD^+K^-)/\Gamma(\Lambda_c^+ K^-\pi^+)$ Γ_2/Γ_1

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.36±0.21	6	OCHERASHVI..05	SELX	Σ^- ≈ 600 GeV

Ξ_{cc}^{+} REFERENCES

KATO	14	PR D89 052003	Y. Kato *et al.*	(BELLE Collab.)
AAIJ	13CD	JHEP 1312 090	R. Aaij *et al.*	(LHCb Collab.)
AUBERT,B	06D	PR D74 011103	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.)