$T_{c\bar{c}0}(4240)^+$

$I^G(J^{PC}) = 1^+(0^{--})$
I, G, C need confirmation.

OMITTED FROM SUMMARY TABLE
was $R_{c0}(4240)$, $X(4240)^\pm$

Properties incompatible with a $q\bar{q}$ structure (exotic state). See the review on non-$q\bar{q}$ states.

Spin and parity assigment $J^P = 0^-$ is favored over 1^-, 2^-, and 2^+ by 8 σ and over 1^+ by 1 σ, according to the four-dimensional amplitude analysis of AAIJ 14AG.

$T_{c\bar{c}0}(4240)^+$ MASS

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
$4239 \pm 18 ^{+45}_{-10}$	[1] AAIJ	14AG	LHCB	$\overline{B}^0 \to K^- \pi^+ \psi(2S)$

[1] From a 4-dimensional analysis when a second, lower mass resonance is allowed in the $T_{c\bar{c}1}(4430)$ fit, with significance 6 σ including systematic variations.

$T_{c\bar{c}0}(4240)^+$ WIDTH

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
$220 \pm 47 ^{+108}_{-74}$	[1] AAIJ	14AG	LHCB	$\overline{B}^0 \to K^- \pi^+ \psi(2S)$

[1] From a 4-dimensional analysis when a second, lower mass resonance is allowed in the $T_{c\bar{c}1}(4430)$ fit, with significance 6 σ including systematic variations.

$T_{c\bar{c}0}(4240)^+$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$\pi^+ \psi(2S)$	seen

$T_{c\bar{c}0}(4240)^+$ BRANCHING RATIOS

$\Gamma(\pi^+\psi(2S))/\Gamma_{total}$ Γ_1/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	[1] AAIJ	14AG	LHCB	$\overline{B}^0 \to K^- \pi^+ \psi(2S)$

[1] From a 4-dimensional analysis when a second, lower mass resonance is allowed in the $T_{c\bar{c}1}(4430)$ fit. No partial branching fraction quoted.

$T_{c\bar{c}0}(4240)^+$ REFERENCES

AAIJ   14AG   PRL 112 222002   R. Aaij *et al.*   (LHCb Collab.)