$T_{cc}(3875)^+$

$I(J^P) = ?(?^?)$

OMITTED FROM SUMMARY TABLE

Observed with large significance by AAIJ 22E in the doubly-charmed (C = 2) decay mode $D^0 D^0 \pi^+$ using inclusive pp collisions at 7, 8, and 13 TeV.

$T_{cc}(3875)^+$ T-Matrix Pole $\sqrt{s}$ relative to $D^0 D^{*+}$ threshold

VALUE (keV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
$(-360 \pm 40^{+4}_{-0}) - i(24 \pm 1^{+0}_{-7})$	117	[1] AAIJ	22Z	LHCB	$pp \to D^0 D^0 \pi^+ X$

• • • We do not use the following data for averages, fits, limits, etc. • • •

$(-356^{+39}_{-38}) - i(28 \pm 1)$	[2] DU	22	RVUE	

[1] The fit uses a coupled channel model accounting for the $D^0 D^{*+}$ threshold. The real part is given relative to the $D^0 D^{*+}$ threshold.

[2] The study provides fits results of three different coupled-channel calculations of increasing levels of sophistication to the LHCb data of AAIJ 22Z. We quote the result of the most advanced calculation with full three-body unitarity. The real part is given relative to the $D^0 D^{*+}$ threshold.

$T_{cc}(3875)^+$ T-Matrix Pole $\sqrt{s}$

VALUE (MeV)	*DOCUMENT ID*
$(3874.75 \pm 0.10) - i(0.024^{+0.001}_{-0.007})$ OUR EVALUATION	

$T_{cc}(3875)^+$ WIDTH

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
$0.048 \pm 0.002^{+0.000}_{=0.014}$	117	[1] AAIJ	22Z	LHCB	$pp \to D^0 D^0 \pi^+ X$

• • • We do not use the following data for averages, fits, limits, etc. • • •

$0.410 \pm 0.165^{+0.047}_{-0.057}$	117	[2] AAIJ	22E	LHCB	$pp \to D^0 D^0 \pi^+ X$

[1] Fit uses coupled channel model accounting for $D^0 D^{*+}$ threshold.

[2] The fit uses a relativistic P-wave Breit-Wigner function without taking into account the $D^0 D^{*+}$ threshold. The fit uses a relativistic P-wave Breit-Wigner function. Parameters are shown to be biased in AAIJ 22Z.

$T_{cc}(3875)^+$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$D^0 D^0 \pi^+$	seen

$T_{cc}(3875)^+$ BRANCHING RATIOS

$\Gamma(D^0 D^0 \pi^+)/\Gamma_{\text{total}}$ Γ_1/Γ

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
seen	117	AAIJ	22E	LHCB	$pp \to D^0 D^0 \pi^+ X$

$T_{cc}(3875)^+$ REFERENCES

AAIJ	22E	NATP 18 751	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	22Z	NATC 13 3351	R. Aaij *et al.*	(LHCb Collab.)
DU	22	PR D105 014024	M.-L. Du *et al.*	(VALE, IFIC, BOCH, KIAE+)