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

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

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.

## $T_{cc}(3875)^+$ MASS

OUR FIT value comes from the measuremet of $m_{T_{cc}^+} - (m_{D^{*+}} + m_{D^0})$ below and $m_{D^{*+}} + m_{D^0}$ values.

| VALUE (MeV) | DOCUMENT ID |
|---|---|
| **3874.83±0.11 OUR FIT** | |

## $m_{T_{cc}^+} - (m_{D^{*+}} + m_{D^0})$

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | COMMENT |
|---|---|---|---|---|
| **−0.27 ±0.06 OUR FIT** | | | | |
| **−0.273±0.061$^{+0.012}_{-0.015}$** | 117 | [1] AAIJ | 22E LHCB | $pp \to D^0 D^0 \pi^+ X$ |

[1] The fit assumes a relativistic $P$-wave Breit Wigner function modified by Blatt-Weisskopf form factor with radius 3.5 GeV$^{-1}$. The significance for $m_{T_{cc}^+} - (m_{D^{*+}} + m_{D^0}) < 0$ is 4.3 $\sigma$.

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

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | COMMENT |
|---|---|---|---|---|
| **0.410±0.165$^{+0.047}_{-0.057}$** | 117 | [1] AAIJ | 22E LHCB | $pp \to D^0 D^0 \pi^+ X$ |

[1] The fit assumes a relativistic $P$-wave Breit Wigner function modified by Blatt-Weisskopf form factor with radius 3.5 GeV$^{-1}$.

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

| | Mode | Fraction ($\Gamma_i/\Gamma$) |
|---|---|---|
| $\Gamma_1$ | $D^0 D^0 \pi^+$ | seen |

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

$\Gamma(D^0 D^0 \pi^+)/\Gamma_{total}$ $\qquad\qquad$ $\Gamma_1/\Gamma$

| 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.) |