# $T_{cc\overline{cc}}(6600)$

$I^G(J^{PC}) = 0^+(2^{++})$

OMITTED FROM SUMMARY TABLE

Assuming that all structures seen in the $J/\psi J/\psi$ final state have the same quantum numbers, CMS determined those to $J^{PC} = 2^{++}$ (HAYRAPETYAN 25AG). State incompatible with a $q\overline{q}$ structure. Needs confirmation. See the review on "Heavy Non-$q\overline{q}$ Mesons."

## $T_{cc\overline{cc}}(6600)$ MASS

| *VALUE* (MeV) | *DOCUMENT ID* | | *TECN* | *COMMENT* |
|---|---|---|---|---|
| **$6646^{+28}_{-25}$ OUR AVERAGE** | | | | |
| $6638^{+43+16}_{-38-31}$ | [1] HAYRAPETY...24 | | CMS | $pp \to J/\psi J/\psi X$ |
| $6650 \pm 20^{+30}_{-20}$ | [2] AAD | 23BL | ATLS | $pp \to J/\psi J/\psi X$ |

[1] In a model with three resonances described by interfering relativistic Breit-Wigner functions above background from non-resonant single and double parton scattering and a threshold enhancement.
[2] In a model with two resonances, with the $T_{cc\overline{cc}}(6600)$ interfering with single parton scattering, and a non-interfering $T_{cc\overline{cc}}(6900)$.

## $T_{cc\overline{cc}}(6600)$ WIDTH

| *VALUE* (MeV) | *DOCUMENT ID* | | *TECN* | *COMMENT* |
|---|---|---|---|---|
| **$440 \pm 70$ OUR AVERAGE** | | | | |
| $440^{+230+110}_{-200-240}$ | [1] HAYRAPETY...24 | | CMS | $pp \to J/\psi J/\psi X$ |
| $440 \pm 50^{+60}_{-50}$ | [2] AAD | 23BL | ATLS | $pp \to J/\psi J/\psi X$ |

[1] In a model with three resonances described by interfering relativistic Breit-Wigner functions above background from non-resonant single and double parton scattering and a threshold enhancement.
[2] In a model with two resonances, with the $T_{cc\overline{cc}}(6600)$ interfering with single parton scattering, and a non-interfering $T_{cc\overline{cc}}(6900)$.

## $T_{cc\overline{cc}}(6600)$ DECAY MODES

| | Mode | Fraction ($\Gamma_i/\Gamma$) |
|---|---|---|
| $\Gamma_1$ | $J/\psi J/\psi$ | seen |

## $T_{cc\overline{cc}}(6600)$ BRANCHING RATIOS

**$\Gamma(J/\psi J/\psi)/\Gamma_{\text{total}}$** **$\Gamma_1/\Gamma$**

| *VALUE* | *DOCUMENT ID* | *TECN* | *COMMENT* |
|---|---|---|---|
| **seen** | HAYRAPETY...24 | CMS | $pp \to J/\psi J/\psi X$ |

## $T_{cc\overline{c}\overline{c}}(6600)$ REFERENCES


| | | | | | |
|---|---|---|---|---|---|
| HAYRAPETY... | 25AG | NAT 648 58 | A. Hayrapetyan *et al.* | (CMS Collab.) | JPC |
| HAYRAPETY... | 24 | PRL 132 111901 | A. Hayrapetyan *et al.* | (CMS Collab.) | |
| AAD | 23BL | PRL 131 151902 | G. Aad *et al.* | (ATLAS Collab.) | |