

$T_{cc\bar{c}\bar{c}}(6900)^0$

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

NODE=M268

OMITTED FROM SUMMARY TABLE

was $X(6900)$

State incompatible with a $q\bar{q}$ structure. See the review on "Heavy Non- $q\bar{q}$ Mesons."

NODE=M268

$T_{cc\bar{c}\bar{c}}(6900)^0$ MASS

NODE=M268M

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
6899 ± 12 OUR AVERAGE [2023 AVERAGE]	Error includes scale factor of 1.1. [6886 ± 16 MeV OUR 2023 AVERAGE]		
6910 ± 10 ± 10	¹ AAD	23BL ATLS	$pp \rightarrow J/\psi J/\psi X$
6886 ± 11 ± 11	² AAIJ	20AY LHCB	$pp \rightarrow J/\psi J/\psi X$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
6960 ± 50 ± 30	³ AAD	23BL ATLS	$pp \rightarrow J/\psi \psi(2S) X$
¹ In a model with two resonances, one describing the broad structure above threshold (mass $6650 \pm 20^{+30}_{-20}$ MeV, width $440 \pm 50^{+60}_{-50}$ MeV) interfering with single parton scattering, and a non-interfering $T_{cc\bar{c}\bar{c}}(6900)$.			
² In a model where the broad structure above threshold interferes with non-resonant single parton scattering. Without interference the mass is $6905 \pm 11 \pm 7$ MeV.			
³ Assuming a single resonance (could be another state). A 3σ signal is observed for an additional resonance with mass $7220 \pm 30^{+10}_{-40}$ MeV and width $90 \pm 60^{+60}_{-50}$ MeV.			

NODE=M268M
NEW

OCCUR=2

NODE=M268M;LINKAGE=B

NODE=M268M;LINKAGE=A

NODE=M268M;LINKAGE=C

$T_{cc\bar{c}\bar{c}}(6900)^0$ WIDTH

NODE=M268W

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
153 ± 29 OUR AVERAGE [168 ± 80 MeV OUR 2023 AVERAGE]			
150 ± 30 ± 10	¹ AAD	23BL ATLS	$pp \rightarrow J/\psi J/\psi X$
168 ± 33 ± 69	² AAIJ	20AY LHCB	$pp \rightarrow J/\psi J/\psi X$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
510 ± 170 ⁺¹¹⁰ ₋₁₀₀	³ AAD	23BL ATLS	$pp \rightarrow J/\psi \psi(2S) X$
¹ In a model with two resonances, one describing the broad structure above threshold (mass $6650 \pm 20^{+30}_{-20}$ MeV, width $440 \pm 50^{+60}_{-50}$ MeV) interfering with single parton scattering, and a non-interfering $T_{cc\bar{c}\bar{c}}(6900)$.			
² In a model where the broad structure above threshold interferes with non-resonant single parton scattering. Without interference the width is 80 ± 38 MeV.			
³ Assuming a single resonance (could be another state). A 3σ signal is observed for an additional resonance with mass $7220 \pm 30^{+10}_{-40}$ MeV and width $90 \pm 60^{+60}_{-50}$ MeV.			

NODE=M268W
NEW

OCCUR=2

NODE=M268W;LINKAGE=B

NODE=M268W;LINKAGE=C

NODE=M268W;LINKAGE=D

$T_{cc\bar{c}\bar{c}}(6900)^0$ DECAY MODES

NODE=M268215;NODE=M268

Mode	Fraction (Γ_i/Γ)
Γ_1 $J/\psi J/\psi$	seen

DESIG=1

 $\Gamma(J/\psi J/\psi)/\Gamma_{\text{total}}$ Γ_1/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
seen	AAD	23BL ATLS	$pp \rightarrow J/\psi J/\psi X$
seen	AAIJ	20AY LHCB	$pp \rightarrow J/\psi J/\psi X$

NODE=M268R00
NODE=M268R00

$T_{cc\bar{c}\bar{c}}(6900)^0$ REFERENCES

NODE=M268

AAD	23BL PRL 131 151902	G. Aad <i>et al.</i>	(ATLAS)
AAIJ	20AY SCIB 65 1983	R. Aaij <i>et al.</i>	(LHCb Collab.)

REFID=62432
REFID=61631