

$P_{c\bar{c}}(4440)^+$

$I(J^P) = \frac{1}{2}(??)$ Status: *

OMITTED FROM SUMMARY TABLE
Was $P_c(4440)^+$.

$P_{c\bar{c}}(4440)^+$ MASS			
VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
$4440.3 \pm 1.3^{+4.1}_{-4.7}$	AAIJ	19W LHCb	pp at 7, 8, 13 TeV

$P_{c\bar{c}}(4440)^+$ WIDTH			
VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
$20.6 \pm 4.9^{+8.7}_{-10.1}$	AAIJ	19W LHCb	pp at 7, 8, 13 TeV

$P_{c\bar{c}}(4440)^+$ DECAY MODES	
Mode	Fraction (Γ_i/Γ)
$\Gamma_1 \quad J/\psi p$	seen
$\Gamma_2 \quad \Lambda_c^+ \bar{D}^0$	not seen
$\Gamma_3 \quad \Lambda_c^+ \pi^+ D^-$	not seen
$\Gamma_4 \quad \Sigma_c(2455)^{++} D^-$	not seen
$\Gamma_5 \quad \Sigma_c(2520)^{++} D^-$	not seen
$\Gamma_6 \quad \bar{\Lambda}_c^- \pi^+ D^+$	[a] not seen
$\Gamma_7 \quad \bar{\Sigma}_c(2455)^0 D^+$	[a] not seen
$\Gamma_8 \quad \bar{\Sigma}_c(2520)^0 D^+$	[a] not seen
$\Gamma_9 \quad \Lambda_c^+ \pi^+ D^{*-}$	not seen
$\Gamma_{10} \quad \bar{\Lambda}_c^- \pi^+ D^{*+}$	[a] not seen

[a] Searched for the charge conjugate mode from $\bar{P}_{c\bar{c}}^-$ decays.

$P_{c\bar{c}}(4440)^+$ BRANCHING RATIOS			
$\Gamma(J/\psi p)/\Gamma_{\text{total}}$			Γ_1/Γ
VALUE	DOCUMENT ID	TECN	COMMENT
seen	¹ POPOV	21 D0	$p\bar{p}$ at 1.96 TeV
seen	AAIJ	19W LHCb	pp at 7, 8, 13 TeV

¹Search for J/ψ inclusive production in association with a charged particle, assumed to be a proton. POPOV 21 observes a resonant signal consistent with a superposition of the $P_{c\bar{c}}(4440)^+$ and $P_{c\bar{c}}(4457)^+$, using masses and widths measured by AAIJ 19W, at significance of 3σ .

$\Gamma(\Lambda_c^+ \bar{D}^0)/\Gamma_{\text{total}}$				Γ_2/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
not seen	AAIJ	24Z	LHCB	$p\bar{p}$, 5.7 fb ⁻¹ at 13 TeV
$\Gamma(\Lambda_c^+ \pi^+ D^-)/\Gamma_{\text{total}}$				Γ_3/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
not seen	AAIJ	24Z	LHCB	$p\bar{p}$, 5.7 fb ⁻¹ at 13 TeV
$\Gamma(\Sigma_c(2455)^{++} D^-)/\Gamma_{\text{total}}$				Γ_4/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
not seen	AAIJ	24Z	LHCB	$p\bar{p}$, 5.7 fb ⁻¹ at 13 TeV
$\Gamma(\Sigma_c(2520)^{++} D^-)/\Gamma_{\text{total}}$				Γ_5/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
not seen	AAIJ	24Z	LHCB	$p\bar{p}$, 5.7 fb ⁻¹ at 13 TeV
$\Gamma(\bar{\Lambda}_c^- \pi^+ D^+)/\Gamma_{\text{total}}$				Γ_6/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
not seen	AAIJ	24Z	LHCB	$\bar{P}_{c\bar{c}}^- \rightarrow \Lambda_c^+ \pi^- D^-$
$\Gamma(\bar{\Sigma}_c(2455)^0 D^+)/\Gamma_{\text{total}}$				Γ_7/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
not seen	AAIJ	24Z	LHCB	$\bar{P}_{c\bar{c}}^- \rightarrow \Sigma_c(2455)^0 D^-$
$\Gamma(\bar{\Sigma}_c(2520)^0 D^+)/\Gamma_{\text{total}}$				Γ_8/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
not seen	AAIJ	24Z	LHCB	$\bar{P}_{c\bar{c}}^- \rightarrow \Sigma_c(2520)^0 D^-$
$\Gamma(\Lambda_c^+ \pi^+ D^{*-})/\Gamma_{\text{total}}$				Γ_9/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
not seen	AAIJ	24Z	LHCB	$p\bar{p}$, 5.7 fb ⁻¹ at 13 TeV
$\Gamma(\bar{\Lambda}_c^- \pi^+ D^{*+})/\Gamma_{\text{total}}$				Γ_{10}/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
not seen	AAIJ	24Z	LHCB	$\bar{P}_{c\bar{c}}^- \rightarrow \Lambda_c^+ \pi^- D^{*-}$

$P_{c\bar{c}}(4440)^+$ REFERENCES

AAIJ	24Z	PR D110 032001	R. Aaij <i>et al.</i>	(LHCb Collab.)
POPOV	21	PAN 83 1383	A.V. Popov <i>et al.</i>	(D0 Collab.)
AAIJ	19W	PRL 122 222001	R. Aaij <i>et al.</i>	(LHCb Collab.)