



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

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 ( $\Gamma_i/\Gamma$ )
$\Gamma_1 \quad J/\psi p$	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

$\Gamma(J/\psi p)/\Gamma_{\text{total}}$	DOCUMENT ID	TECN	COMMENT	$\Gamma_1/\Gamma$
seen	<sup>1</sup> POPOV	21	D0	$p\bar{p}$ at 1.96 TeV
seen	AAIJ	19W	LHCB	$pp$ at 7, 8, 13 TeV

<sup>1</sup> Search for  $J/\psi$  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  $3\sigma$ .

$\Gamma(\Lambda_c^+ \bar{D}^0)/\Gamma_{\text{total}}$	$\Gamma_2/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
<b>not seen</b>	AAIJ    24Z    LHCB $p\bar{p}$ , 5.7 fb <sup>-1</sup> at 13 TeV
$\Gamma(\Lambda_c^+ \pi^+ D^-)/\Gamma_{\text{total}}$	$\Gamma_3/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
<b>not seen</b>	AAIJ    24Z    LHCB $p\bar{p}$ , 5.7 fb <sup>-1</sup> at 13 TeV
$\Gamma(\Sigma_c(2455)^{++} D^-)/\Gamma_{\text{total}}$	$\Gamma_4/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
<b>not seen</b>	AAIJ    24Z    LHCB $p\bar{p}$ , 5.7 fb <sup>-1</sup> at 13 TeV
$\Gamma(\Sigma_c(2520)^{++} D^-)/\Gamma_{\text{total}}$	$\Gamma_5/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
<b>not seen</b>	AAIJ    24Z    LHCB $p\bar{p}$ , 5.7 fb <sup>-1</sup> at 13 TeV
$\Gamma(\bar{\Lambda}_c^- \pi^+ D^+)/\Gamma_{\text{total}}$	$\Gamma_6/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
<b>not seen</b>	AAIJ    24Z    LHCB $\bar{P}_{c\bar{c}}^- \rightarrow \Lambda_c^+ \pi^- D^-$
$\Gamma(\bar{\Sigma}_c(2455)^0 D^+)/\Gamma_{\text{total}}$	$\Gamma_7/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
<b>not seen</b>	AAIJ    24Z    LHCB $\bar{P}_{c\bar{c}}^- \rightarrow \Sigma_c(2455)^0 D^-$
$\Gamma(\bar{\Sigma}_c(2520)^0 D^+)/\Gamma_{\text{total}}$	$\Gamma_8/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
<b>not seen</b>	AAIJ    24Z    LHCB $\bar{P}_{c\bar{c}}^- \rightarrow \Sigma_c(2520)^0 D^-$
$\Gamma(\Lambda_c^+ \pi^+ D^{*-})/\Gamma_{\text{total}}$	$\Gamma_9/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
<b>not seen</b>	AAIJ    24Z    LHCB $p\bar{p}$ , 5.7 fb <sup>-1</sup> at 13 TeV
$\Gamma(\bar{\Lambda}_c^- \pi^+ D^{*+})/\Gamma_{\text{total}}$	$\Gamma_{10}/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
<b>not seen</b>	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.)