

NODE=B171

$P_{c\bar{c}}(4380)^+$

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

OMITTED FROM SUMMARY TABLE  
Was  $P_c(4380)^+$ .

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A resonance seen in  $\Lambda_b^0 \rightarrow P_c^+ K^-$ , then  $P_c \rightarrow J/\psi p$ , with a significance of 9 standard deviations. The  $J/\psi p$  quark content is  $uudc\bar{c}$ , a pentaquark. See also the  $P_c(4450)^+$ . In the best amplitude fit, the two states have opposite parity, one having  $J = 3/2$ , the other  $J = 5/2$ .

Extraction of the pentaquark signals requires some understanding of the dominant  $K^- p$  background. AAIJ 15P used a model-dependent approach. AAIJ 16AG reanalyzed the data making minimal assumptions about the  $K^- p$  background, and thus confirmed the strong significance of the pentaquark signals.

$P_{c\bar{c}}(4380)^+$  MASS

NODE=B171M

| VALUE (MeV)      | DOCUMENT ID | TECN     | COMMENT           |
|------------------|-------------|----------|-------------------|
| <b>4380±8±29</b> | AAIJ        | 15P LHCb | $p p$ at 7, 8 TeV |

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$P_{c\bar{c}}(4380)^+$  WIDTH

NODE=B171W

| VALUE (MeV)      | DOCUMENT ID | TECN     | COMMENT           |
|------------------|-------------|----------|-------------------|
| <b>205±18±86</b> | AAIJ        | 15P LHCb | $p p$ at 7, 8 TeV |

NODE=B171W

$P_{c\bar{c}}(4380)^+$  DECAY MODES

NODE=B171215;NODE=B171

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

DESIG=1

$P_{c\bar{c}}(4380)^+$  BRANCHING RATIOS

NODE=B171225

| $\Gamma(J/\psi p)/\Gamma_{\text{total}}$ |             |          |                   | $\Gamma_1/\Gamma$ |
|------------------------------------------|-------------|----------|-------------------|-------------------|
| VALUE                                    | DOCUMENT ID | TECN     | COMMENT           |                   |
| <b>seen</b>                              | AAIJ        | 15P LHCb | $p p$ at 7, 8 TeV |                   |

NODE=B171R01  
NODE=B171R01

$P_{c\bar{c}}(4380)^+$  REFERENCES

NODE=B171

|      |                     |                       |                |
|------|---------------------|-----------------------|----------------|
| AAIJ | 16AG PRL 117 082002 | R. Aaij <i>et al.</i> | (LHCb Collab.) |
| AAIJ | 15P PRL 115 072001  | R. Aaij <i>et al.</i> | (LHCb Collab.) |

REFID=57460  
REFID=56488