# $P_c(4380)^+$

Status: ＊

A resonance seen in $\Lambda_b^0 \to P_c^+ K^-$, then $P_c \to J/\psi p$, with a significance of 9 standard deviations. The $J/\psi p$ quark content is $u u d c \overline{c}$, 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.

## $P_c(4380)^+$ MASS

| VALUE (MeV) | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|
| **4380±8±29** | AAIJ | 15P | LHCB | $p p$ at 7, 8 TeV |

## $P_c(4380)^+$ WIDTH

| VALUE (MeV) | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|
| **205±18±86** | AAIJ | 15P | LHCB | $p p$ at 7, 8 TeV |

## $P_c(4380)^+$ DECAY MODES

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

## $P_c(4380)^+$ BRANCHING RATIOS

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

| VALUE | DOCUMENT ID | | TECN | COMMENT |
|---|---|---|---|---|
| **seen** | AAIJ | 15P | LHCB | $p p$ at 7, 8 TeV |

## $P_c(4380)^+$ REFERENCES

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