$P_c(4450)^+$

Status: ∗

A resonance seen in $\Lambda_b^0 \rightarrow P_c^+ K^-$, then $P_c \rightarrow J/\psi p$, with a significance of 12 standard deviations. The $J/\psi p$ quark content is $uudc\overline{c}$, a pentaquark. See also the $P_c(4380)^+$. 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.

$P_c(4450)^+$ MASS

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
4449.8±1.7±2.5	AAIJ	15P	LHCB	pp at 7, 8 TeV

$P_c(4450)^+$ WIDTH

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
39±5±19	AAIJ	15P	LHCB	pp at 7, 8 TeV

$P_c(4450)^+$ DECAY MODES

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

$P_c(4450)^+$ BRANCHING RATIOS

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

VALUE	DOCUMENT ID		TECN	COMMENT
seen	AAIJ	15P	LHCB	pp at 7, 8 TeV

$P_c(4450)^+$ REFERENCES

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