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Pentaquarks and Tetraquarks at LHCb

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Observations of exotic structures in the $J/\psi p$ channel, that we refer to as pentaquark-charmonium states, in Λ_b to $J/\psi p K^-$ decays are presented. The data sample corresponds to an integrated luminosity of 3 inverse femtobarns acquired with the LHCb detector from 7 and 8 TeV pp collisions. An amplitude analysis is performed on the three-body final state that reproduces all the angular and two-body mass distributions in the decay chain. To obtain a satisfactory fit of the structures seen in the $J/\psi p$ mass spectrum, it is necessary to include two Breit-Wigner amplitudes that each describe a resonant state. We also discuss the related amplitude analysis that measured unambiguously the spin-parity of the $Z_c(4430)^+$ state that decays into $\psi' \pi^+$

Oral or Poster Presentation

Oral

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