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# Decoding the nature of the pentaquarks in LHC

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The updated analysis of LHCb in the
$\Lambda_b^0 \to J/\psi p K^-$ process with nine times data sample
in Run II presents three narrow pentaquark structures instead of
two in the previous analysis.
However, although the large data sample is available,
the quantum numbers of the three pentaquarks and the corresponding
anglular momentum distribution are still missing.
As these three pentaquarks are close to the
$(\bar{D}, \bar{D}^*) + (\Sigma_c(2455), \Sigma_c(2520))$
thresholds, they could be accepted as hadronic molecular states.
We do an overall fit for the lineshape of these three states
by solving Lippmann-Schwinger equation with dynaimc pion
as well as the inelastic channel to study,
to which extent, these three structures could exist as hadronic
molecular states. Their quantum numbers and the corresponding
angular distributions are also presented for the comparison with
further experimental analysis.

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