

J/ψ -nucleon scattering in P_c^+ pentaquark channels

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Two pentaquarks P_c^+ were discovered by LHCb collaboration as peaks in the J/ψ -nucleon invariant mass. We performed the lattice QCD study of the scattering between J/ψ meson and nucleon in the channels with $J^P = \frac{3}{2}^+, \frac{3}{2}^-, \frac{5}{2}^+, \frac{5}{2}^-$, where P_c^+ was discovered. Energies of the eigenstates in these channels are extracted for the first time from the lattice. We consider the single-channel approximation as a first step towards understanding these challenging channels.

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