

# $J/\psi$ -nucleon scattering in $P_c^+$ pentaquark channels

Friday, July 27, 2018 3:40 PM (20 minutes)

Two pentaquarks  $P_c^+$  were discovered by LHCb collaboration as peaks in the  $J/\psi$ -nucleon invariant mass. We performed the lattice QCD study of the scattering between  $J/\psi$  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.

**Primary author:** Ms SKERBIS, Ursa (Jozef Stefan Institute, Ljubljana, Slovenija)

**Co-author:** Prof. PRELOVSEK, Sasa (University of Ljubljana)

**Presenter:** Ms SKERBIS, Ursa (Jozef Stefan Institute, Ljubljana, Slovenija)

**Session Classification:** Hadron Spectroscopy and Interactions

**Track Classification:** Hadron Spectroscopy and Interactions