

Understanding the LHCb pentaquarks from an EFT perspective

Content

The recent LHCb discovery of three pentaquark states may usher in a new era in our understanding of the low energy strong interaction. These states might be part of a first complete multiplet composed of seven hadrons of molecular nature. At least this is what emerges from a leading order effective field theory using only data and heavy quark spin symmetry as constraints [1]. In addition, we will show that the heavy antiquark diquark symmetry enable us to connect the pentaquark states to the dibaryon states of doubly charmed and singly charmed baryons. If the predicted strong correlation between these two systems is confirmed on the lattice, it will not only determine the spins of the $P_c(4440)$ and $P_c(4457)$ but also provide a nontrivial check on the proposed molecular picture for the pentaquark states [2].

References 1) Phys.Rev.Lett. 122 (2019) 242001 2) arXiv:1907.11220

Summary

Primary author(s) : Prof. GENG, Lisheng (Beihang University)

Presenter(s) : Prof. GENG, Lisheng (Beihang University)