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Dibaryon Searches in Decuplet Baryons from Lattice QCD

Tuesday, 29 May 2018 17:20 (30 minutes)

In recent years, there is a renewed interest in the dibaryons due to exclusive measurements in hadron reactions as well as the direct measurement in relativistic heavy-ion collisions. In this talk, we will present the result of the dibaryon searches from lattice QCD. Particularly we focus on the study of "Most strange dibaryon", which is composed of two Ω baryons. First, we will show the result of the Ω-Ω interaction in the ${}^1S_0$ channel at almost physical point, and then will clarify that the interaction leads to a shallow bound state. We may talk about the Δ-Δ interaction in the ${}^7S_3$ channel in the case of the heavy pion mass. In the interaction, there appears a deep bound state that is observed as a resonance of two nucleons in an experiment by the CELSIUS/WASA Collaboration.

S. Gongyo *et al.*, Most Strange Dibaryon from Lattice QCD, arXiv:1709.00654 [hep-lat], accepted in PRL.

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