



国立研究開発法人理化学研究所 仁科加速器研究センター
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Dibaryon candidates in decuplet baryons from lattice QCD

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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

present the result of the first principle calculation using lattice QCD. Particularly we focus on the study for dibaryon candidates involving with the decuplet baryon: (i) the Delta-Delta system with the heavy pion mass, and (ii) the Omega-Omega system with the physical pion mass as well as the heavy pion mass [1]. The Delta-Delta interaction in the $7S_3$ channel obtained from lattice QCD shows only a strongly attractive interaction (no repulsive core), which leads to a bound state of two Delta baryons, observed as a resonance of two-nucleons in experiment. The result of the Omega-Omega interaction

in the $1S_0$ channel at physical point shows a shallow bound state (di-Omega) with similar properties to deuteron.

[1] S. Gongyo et al. [HAL QCD Collaboration], PRL 120, no. 21, 212001 (2018)

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RIBF Hall, RIBF bldg., RIKEN

* The talk will be given in English language.

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