



Contribution ID: 13

Type: **not specified**

Most charming dibaryon near unitarity from lattice QCD

We present a first study on a pair of triply charmed baryons, $\Omega_{ccc}\Omega_{ccc}$ in the 1S_0 channel (the most charming dibaryon), on the basis of the HAL QCD method.

The calculations are performed on the $(2 + 1)$ -flavor lattice QCD configurations with nearly physical light-quark masses and physical charm-quark mass.

We show that the system with the Coulomb repulsion taking into account the charge form factor of Ω_{ccc} leads to the scattering length $a_0^C \simeq -19$ fm and the effective range $r_{\text{eff}}^C \simeq 0.45$ fm, which indicates $\Omega_{ccc}\Omega_{ccc}$ is located in the unitary regime.

Primary author: LYU, Yan (school of physics Peking University)

Co-authors: TONG, Hui (school of physics Peking University); AOKI, Sinya (YITP, Kyoto University); Dr MIYAMOTO, Takaya (RIKEN); Prof. DOI, Takumi (RIKEN); Dr SUGIURA, Takuya (RIKEN); Prof. HATSUDA, Tetsuo (RIKEN); Prof. 孟, 杰 (北京大学)

Presenter: LYU, Yan (school of physics Peking University)