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Baryon interactions from lattice QCD with physical masses – $S=-2$ sector –

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Baryon interactions are crucial to study a bound and/or resonance state in multi-baryon systems.

In spite of their importance, phenomenological baryon potentials have large uncertainties because of the lack of experimental scattering data.

In recent studies, the HAL QCD method allow us to extract baryon interactions from the Nambu-Bethe-Salpeter wave functions without using experimental data.

We present our latest result on the $S = -2$ baryon interactions and discuss the H-dibaryon state using potentials which are calculated by using the (almost) physical point gauge configurations with large lattice volume of $(8\text{fm})^4$ generated on the K-computer.

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