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## ROLE OF NUCLEAR INTERACTIONS ON THE GROUND-STATE STRUCTURE OF HELIUM-6 THREE-BODY SYSTEM

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In the study of three-body weakly-bound systems, a three-body interaction is always introduced to take care of the dynamics that cannot be accounted for by two-body interactions. In order to get some insight into these dynamics, in this presentation, we study the relevance of the three-body interaction as the number of neutrons in the three-body system increases, considering helium-6. It is found that by removing this interaction from the structure of the system, the ground-state binding energy of the helium-6 system drops by approximately 80%. This shows that the three-body interaction plays a significant role in the dynamics of a three-body weakly-bound neutron-rich system.

**Keywords:** Three-body system, Three-body interaction, Binding energy.

**Apply to be considered for a student ; award (Yes / No)?**

Yes

**Level for award;(Hons, MSc, PhD, N/A)?**

MSc

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