

LITHIUM-10 AS BORROMEAN NUCLEUS SUBSYSTEM

Friday, 15 July 2022 16:00 (20 minutes)

The Borromean system have a wide spread near nuclear driplines. These systems are of strong interest for theoretical and experimental studies because of their exotic properties, such as strong nuclear matter asymmetry and anomalous nuclear density (halo effect).

The cluster three body models usually provide good description of the borromean nuclei structure. In particular, three-body model reproduce nuclear halo effect and anomalous matter radius for bound states of borromean nuclei and partial width for two-proton / two-neutron decays for continuum states. Obviously, cluster models require accurate treatment of interaction between clusters. When one have reasonable description for nucleon-nucleon interaction, treatment of interaction of the core (which is also dripline nucleus) with nucleon is complex problem.

On example of nuclear system ^{10}Li and ^{11}Li two quite general problems will be discussed: how structure of borromean system connected with structure of it binary subsystems; and how interaction in binary subsystems can be experimentally studied.

The speaker is a student or young scientist

Yes

Section

1. Nuclear structure: theory and experiment

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