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Exploring nuclear structures beyond mean-field using radioactive isotope beams

Content

Nuclear structures involve complex quantum many-body problems, primarily described by nuclear mean-fields. Many-body correlations result in various phenomena that extend beyond simple descriptions and sometimes even beyond nucleonic degrees of freedom. Addressing issues such as quenching problems and mesonic currents remains a longstanding challenge in this area. Radioactive isotopes provide valuable information about structural evolution through binding energies and neutron/proton asymmetry. This talk will discuss recent studies at facilities such as RI Beam Factory, RCNP or GANIL. Topics will cover investigation of spectroscopic factor quenching near the proton drip line in light elements using uncertainty-quantified optical model-based reaction analysis, as well as forbidden M1 transitions in radioactive isotopes near calcium.

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