

Shape coexistence in exotic nuclei studied by low energy coulomb excitation

Wednesday 14 February 2007 15:20 (20 minutes)

The study of the shape coexistence in exotic nuclei provide important benchmarks for modern nuclear theories. Shape-coexisting states in neutron-deficient krypton isotopes have been studied by low-energy multi-step Coulomb excitation of radioactive ^{74}Kr and ^{76}Kr beams at GANIL. Thanks to a large statistic, both transitional and diagonal matrix elements were extracted up to high spins using the GOSIA code. The final result shows a complex coupling between prolate, oblate and vibrational configurations. All experimental values are compared with HFB+GCM theoretical calculations underlining the necessity to treat all quadrupole degrees of freedom to describe these nuclei. Finally, the investigation of shape coexistence between a highly deformed prolate configuration and a spherical state in neutron-rich nuclei around $N=60$ at REX-ISOLDE will be presented. The future Coulomb excitation experiment (IS451) of a radioactive ^{96}Sr beam at MINIBALL will be discussed.

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Session Classification: Physics 4