

Nuclear structure studies in the Sn-132 region with 3-MeV/u Beams

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The collective and single-particle structure of nuclei in the Sn-132 region was studied by Coulomb excitation and heavy-ion induced transfer reactions. Coulomb excitation was used to determine a complete set of electromagnetic moments for the first $2+$ states and one-neutron transfer was used to probe the purity and evolution of single-neutron states. The double-magic nature of Sn-132 and the emergence of collectivity will be discussed. These experiments were conducted at the Holifield Radioactive Ion Beam Facility (HRIBF) at ORNL using a CsI-HPGe detector array (BareBall-CLARION) for scattered particles and gamma rays. A survey of the equipment, techniques, and results will be presented. An emphasis will be placed on unique opportunities with 3-MeV/u beams.

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