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**Coulomb excitation and transfer reactions to study neutron-rich nuclei<sup>1</sup>**

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At radioactive beam facilities, such as the Holifield facility at ORNL and the future FRIB, neutron-rich fission fragments can be re-accelerated and used for in-beam nuclear structure studies. Two of the most promising reaction mechanisms for such experiments are Coulomb excitation and single-nucleon transfer reactions. When paired with a powerful gamma-ray detector such as GRETINA, these reactions can be used to perform detailed, systematic studies of nuclear collectivity and single-particle structures, and their dependence on neutron and proton numbers. Excited-state lifetimes, magnetic moments, spectroscopic factors, and single-particle energies are all accessible. Examples of some past measurements will be presented, together with an analysis of the reach of these techniques when used with GRETINA and GRETA. Some of the advantages of GRETINA for these experiments, such as energy resolution and high efficiency, will be discussed.

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