

Quest for complete measurements of beta decays*

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Beta decay, as the most prevalent decay mode, continues to be a research focus, boosted by the improved access to exotic isotopes in the new generation of radioactive ion beam facilities. Decay paths of exotic isotopes become more complex with increased Q-values, and efficient measurements require the development of instrumentation capable of complete measurements. The University of Tennessee and ORNL groups were involved in constructing the FRIB Decay Station Initiator (FRIB), which will serve as the primary instrument for decay spectroscopy with exotic beams at FRIB. FDSi was implemented in experiments, and its design capabilities were successfully demonstrated. With its multi-detector design, FDSi will enable complete spectroscopy of nuclear decays to capitalize on the discovery potential of FRIB through access to exotic isotopes and enable overall more complete measurements. My recent research focus is on searching for non-statistical effects in beta-delayed particle emission where the FDSi could provide excellent measurement prospects.

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