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Internal Conversion Electron Spectroscopy at TRIUMF-ISAC [INVITED]

Friday, 16 February 2018 09:00 (30 minutes)

Internal conversion electron (ICE) spectroscopy is a key tool of nuclear structure research, particularly for the study of elusive electric monopole ($E0$) transitions. Such spectroscopy is less common than gamma-ray spectroscopy due to the technical challenges involved, however it provides crucial insight few other techniques can.

The nuclear spectroscopy group at TRIUMF has two powerful detector arrays for studying competing internal conversion electrons and gamma rays. The SPectrometer for Internal Conversion Electrons (SPICE) is used with the TIGRESS HPGe array for studying nuclear structure in accelerated heavy ion experiments. The Pentagonal Array of Conversion Electron Spectrometers (PACES) is used with the GRIFFIN HPGe array for decay spectroscopy to study internal conversion electrons following beta decay. In this talk I will explain the details of ICE spectroscopy and $E0$ transitions as well as the equipment and techniques employed at TRIUMF. Results from recent studies of shape-coexistence in ^{70}Se with SPICE, beta-decay studies of ^{72}Ge and neutron deficient Hg isotopes with PACES and the development of electron-gamma angular correlation techniques with GRIFFIN will be presented.

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