



Contribution ID: 304

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## Optimization of Digital Parameters and Offline Sorting Code for Experiments at IDS/CERN

The ISOLDE Decay Station (IDS) is an experimental setup at the ISOLDE facility at CERN dedicated to beta-decay spectroscopy for research into nuclear structure, nuclear engineering, and astrophysics. UWC has a leading experiment approved at IDS to investigate nuclear shape coexistence in  $^{80,82}\text{Sr}$  nuclei with the beta decay of  $^{80,82}\text{Y}$ . The study aims at measuring internal conversion electrons using the SPEDE electron spectrometer, branching ratios with four germanium clover detectors, and lifetimes with two  $\text{LaBr}_3(\text{Ce})$  detectors. These measurements will complement our investigations of shape effects in  $^{80,82}\text{Sr}$  using safe multi-step Coulomb excitation measurements carried out at TRIUMF. The new Modern African Nuclear Detector Laboratory (MANDELA) at the University of the Western Cape is equipped with a double photon counting setup using NaI scintillation detectors and a 250-MHz Pixie-16 digitizer from XIA. This digitizer is similar to the 100-MHz Pixie-16 digitizers in use at IDS. Data are acquired using the acquisition code POLL2, ROOT trees are built using the IDS sorting code xia4ids, and gamma-gamma matrices are created to examine coincidence relationships. Results in preparation of our new experiment at CERN will be presented.

### Apply to be considered for a student ; award (Yes / No)?

Yes

### Level for award;(Hons, MSc, PhD, N/A)?

MSc

**Primary authors:** MADONSELA, Remember Ayanda; Prof. ORCE, Nico (UWC); Dr BERNIER, Nikita (UWC)

**Presenter:** MADONSELA, Remember Ayanda

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