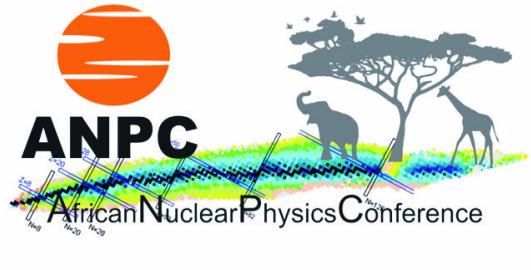

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Searching for Shape Coexistence in 70Se

The shape coexistence phenomenon is prevalent in the Z~34 region, with multiple neutron-deficient even Ge [1] , Se [2] and Kr [3] isotopes each exhibiting the characteristic low-lying coexisting 0^+ bands which display quadrupole deformation different to that of the ground states.
In the selenium isotopes, coexisting shapes $^{72-78}$Se seem to show a prolate ground structure with coexisting oblate excitation [4,5,6], while in ^{68}Se the oblate structure appears to have become the ground state [7]. In ^{70}Se however, not only is the ground state shape uncertain [8], a low-lying 0^+ state has yet to be identified. Recent work in neighbor Kr isotopes has pushed to ^{70}Se's isospin partner ^{70}Kr and identified states thought to be part of a shape coexisting structure [9]. With our picture of the region rapidly evolving the uncertain structure of ^{70}Se stands out as a clear remaining question.

The SPectrometer for Internal Conversion Electrons (SPICE) is one of the latest generation of tools for studying Internal Conversion Electrons (ICE) [10]. The spectroscopic study of ICE is one of the primary means available for the study of electric monopole (E0) transitions, which are themselves a key observable in the study of nuclear shapes and shape coexistence.
Using SPICE an experimental investigation was undertaken at the TRIUMF ISAC-II facility which aims to confirm the presence of the anticipated coexisting 0^+ band-head in ^{70}Se. Details of the device and experiment will be presented, alongside the latest results of analysis.

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