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Re-evaluation of Structures in ^{70}Se with SPICE and TIGRESS

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In the $Z=34$ region of the atomic chart a pattern of shape coexistence has been observed, with oblate and prolate bands apparently coexisting and switching order as neutron number changes. With recent spectroscopic developments the question of where such an inversion occurs has been drawn into question.

A detailed internal conversion electron and gamma ray spectroscopic study of ^{70}Se was undertaken at TRIUMF ISAC-II facility using the SPICE and TIGRESS spectrometers. An analysis of electron data found no evidence for the predicted low lying 0^+ state, furthermore significant discrepancies were found between the experimentally deduced level schemes and those previously published. The new data were analysed with comparison to various theoretical interpretations. A new picture of the region has emerged which appears to invalidate previous theoretical descriptions of the nucleus.

Details of the experiment, analysis technique and results will be presented, alongside theoretical interpretations.

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