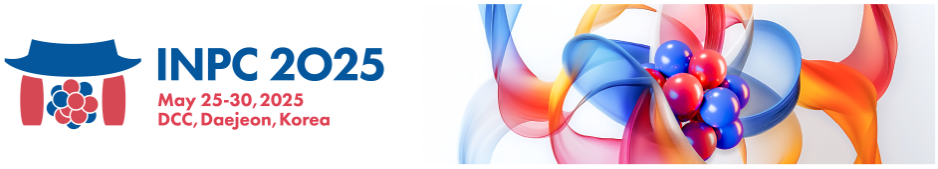

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Evidence against shape coexistence and in favour of triaxiality in 70Se

Thursday, 29 May 2025 17:00 (15 minutes)

In the selenium isotopes various shape phenomena are present. The scenario of shape coexisting oblate and prolate bands has been proposed across the isotopic chain, with the crossing point of such bands being located near ^{70}Se.
A combined internal conversion electron and γ-ray spectroscopy study was undertaken at the TRIUMF-ISAC-II facility to undertake a comprehensive search for evidence of the existence of a 0^+ state below 2 MeV in ^{70}Se. Significant discrepancies to the previously established positive parity level scheme were found.
Generalised Bohr Hamiltonian calculations using UNEDF1 mass parameters were found to reproduce the revised low-lying level structure well, with the 2_2^+ state resembling a quasi-γ excitation rather than a member of a shape coexisting band.

Consent

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