Contribution ID: 78

Type: Poster

## Investigating shape coexistence in Z≈N A≈70 nuclei using Couloumb excitation of selenium-74

The neutron-deficient selenium and krypton have been observed to exhibit a wide range of shapes which can be linked to large shell gaps. Typically, for even-even nuclei in this region, the ground states are of prolate deformation with oblate states built on a deformed 0+ state. However, certain nuclei, such as krypton-72 and selenium-68, are suggested to have the reverse configuration, i.e. oblate ground state with a prolate band built on the excited 0+. Our analysis focuses on selenium-74 (Z=34, N=40), which from existing spectroscopic data has been thought to exhibit strong configuration mixing at low spin. A more recent beta-decay measurement provided for the first time firm spin assignment of multiple low-lying states in selenium-74 and proposed an alternative interpretation, namely that the states typically believed to be of either oblate or prolate shape are of vibrational quasi-spherical character. In our analysis, based on data obtained in 2022 in a Coulomb excitation experiment at LNL, we seek to obtain quadrupole moments and relative signs for E2 matrix elements in selenium-74, as well as the matrix elements for transitions between states that are very closely situated in energy.

Author:KJUS, Robin (CEA Saclay)Presenter:KJUS, Robin (CEA Saclay)Session Classification:Day 1