Contribution ID: **3** Type: **not specified**

Search for shape coexistence in Sn isotopes around A=110

Friday, 21 June 2024 15:20 (20 minutes)

In this contribution, we present our investigation of the shape coexistence phenomenon in Sn isotopes around A=110, by means of γ-ray spectroscopy and lifetime measurements of low-spin states. Recent observation of axially deformed 0^+ states in ^{64,66}Ni isotopes suggested the possibility of having similar excitations in the stable Sn isotopes, across the $Z = 50$ shell gap, due to analogies in the orbital configuration. Such hypothesis is corroborated by Monte Carlo Shell Model (MCSM) calculations, whose potential energy surfaces of $^{110-118}$Sn exhibit a well-separated prolate secondary minimum, as in the Ni case.\\
Experimentally, several excited 0^+ states have been observed in even-even $^{110-118}$Sn, mainly via particle spectroscopy, however limited information on their lifetimes is available. To address this issue, a series of complementary experiments was carried out by our collaboration between LNL and IFIN-HH, employing the ROSPHERE-SORCERER and the AGATA-PRISMA setup, respectively. In particular, ^{110,112,114}Sn were populated by low-energy multi-nucleon transfer reactions and the plunger method was applied to determine the lifetimes of excited states. Preliminary results will be compared with MCSM calculations, giving an insight into the microscopic mechanism leading to the onset of deformation in this region.

Primary author: CORBARI, Giacomo (Università degli Studi di Milano and INFN)

Presenter: CORBARI, Giacomo (Università degli Studi di Milano and INFN)

Session Classification: On-going analysis

Track Classification: Shape coexistence