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Title: Structure of ^{83}As , ^{85}As and ^{87}As : from semi-magicity to gamma-softness

The neutron-rich nuclei beyond $Z=28$ and $N=50$ shell closures present a rich variety of collective effects, such as shape coexistence found in ^{78}Ni [1,2]. In germanium isotopes, an onset of triaxial deformation with filling of the $s_{1/2}$ and $d_{5/2}$ neutron orbitals has been reported [3-5]. One proton heavier, the arsenic ($Z=33$) nuclei are expected to manifest a similar structure, with the onset of collectivity beyond $N=50$. The quantification of deformation over the region of Ge, As and Se chains may be an important feature to connect with r-process nucleosynthesis scenarios, as these nuclei lie in the path of the r-process flow.

The exotic arsenic isotopes between ^{83}As and ^{87}As ($N=50$ to 54) were populated in the inverse-kinematic fusion-fission reaction $^{238}\text{U}+^9\text{Be}$ (6.2 MeV/u) in the experiment performed in GANIL. The AGATA array composed of 24 HPGe crystals was coupled to the VAMOS spectrometer placed at 28° to detect the most exotic light fragments, in order to study the isotopes beyond $N=50$ in the ^{78}Ni region. The previously existing information about the level schemes of these exotic species is scarce. In this talk the extended level schemes of ^{83}As and ^{85}As will be presented, along with the first suggested level scheme of ^{87}As . The data are interpreted in terms of the state-of-the-art LSSM calculations, pseudo-SU3 symmetries and the beyond-mean-field calculations with the novel DNO-SM method. The comparison points to the prolate deformation of the ^{85}As and ^{87}As ground states and confirms the presence of triaxiality and gamma-softness in this region.

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