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## Title: Structure of 83As, 85As and 87As: 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  $^{78}\text{Ni}$  [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  $^{83}\text{As}$  and  $^{87}\text{As}$  ( $N=50$  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  $28^\circ$  to detect the most exotic light fragments, in order to study the isotopes beyond  $N=50$  in the  $^{78}\text{Ni}$  region. The previously existing information about the level schemes of these exotic species is scarce. In this talk the extended level schemes of  $^{83}\text{As}$  and  $^{85}\text{As}$  will be presented, along with the first suggested level scheme of  $^{87}\text{As}$ . 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  $^{85}\text{As}$  and  $^{87}\text{As}$  ground states and confirms the presence of triaxiality and gamma-softness in this region.

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