

Seminarium Studium Doktoranckiego NCBJ
Poniedziałek, 19 listopada, godzina 9:00 Sala 22 w NCBJ, Hoża 69

Speaker: Michał Palczewski (Studium Doktoranckie NCBJ)

Title: Shapes and sizes of high-K states in SHN

Abstract:

Superheavy elements are highly unstable systems with extremely low production cross sections. As the creation of new ones is very difficult, as a parallel or additional line of study one could try a search for new, long-lived metastable states of already known nuclei. It is well known that an enhanced stability may result from the K-isomerism phenomenon which is based mainly on the (partial) conservation of the K-quantum number. To do such studies energies are calculated within the microscopic – macroscopic approach with the deformed Woods-Saxon potential. Configurations are fixed by a standard blocking procedure and their energy found by a subsequent minimization over deformations.

Results of blocking for 2 quasiparticle states (nn or pp) as well as for 4 quasiparticle states (nnpp) will be shown. The relationship between electric quadrupole moments in different isotopes will be discussed next. Especially some of specific deformation parameters for No isotopes – which are experimentally studied now via laser technique will be demonstrated during the talk. Finally, predictions for Rf and some of heavier elements as: Sg, Hs, Ds and Cn – will be shown.