



The 564th Nuclear Science Seminar

Dr. Kathrin Wimmer

(Department of Physics, the University of Tokyo)

Modifications of the Nuclear Shell Structure: Spectroscopy in Islands of Inversion

October 15th, 2014 (Wed) 16:00-17:00

Room 309, Faculty of Science Build 1,
Hongo campus, the University of Tokyo

One of the major successes in the description of the properties of atomic nuclei was the introduction of the nuclear shell model. In the last decades it was found that the well-known magic numbers for atomic nuclei can change locally when going from the valley of stability to nuclei with extreme N/Z ratios, leading to the disappearance of classic shell gaps and the appearance of new magic numbers. This evolution of the magic numbers is one of the major topics in both experimental and theoretical nuclear structure research. Modifications of the nuclear shell structure can lead to unexpected phenomena, such as the occurrence of deformed ground states in so-called "Islands of Inversion". In this talk I will present recent results from in-beam gamma-spectroscopy experiments using the GRETINA array at the NSCL. Detailed spectroscopy of neutron-rich nuclei around $N = 20$ and 40 will shed new light on the evolution of nuclear shell structure in exotic nuclei.

Nuclear Science Seminar (NSS)

Web: <http://nucl.phys.s.u-tokyo.ac.jp/nex/seminar.html>

Email: nss@nucl.phys.s.u-tokyo.ac.jp