

EVOLUTION OF NUCLEAR SHELL STRUCTURE AND ITS SYMMETRY

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4:00 P.M. NSH 124**

Exotic nuclei with very unusual proton-to-neutron ratios often show surprising phenomena, presenting important challenges to our understanding of atomic nuclei. The goal of present-day nuclear physics is thus to establish the unified understanding of nuclear structure for stable and exotic nuclei, by exploring the isospin degree-of-freedom of the shell structure and collective properties of nuclei.

The present talk focuses on recent experimental studies of neutron-rich and neutron-deficient nuclei in the vicinity of the conventional magic numbers $N, Z = 8$ [1,2] and $N = 40$ [3]. The isospin or isotonic symmetry manifested in the shell quenching phenomena has been investigated through spectroscopic studies of exotic nuclei. The experimental results will be presented and discussed in terms of possible mechanisms responsible for shell evolution.

If time permits, a very recent experiment at NSCL in the proton-rich region at around $N=40$ will also be presented.

[1] H.Iwasaki, Phys.Lett. B491 (2000) 8

[2] D.Suzuki, Phys.Rev.Lett. 103 (2009) 152503

[3] W.Rother, Phys.Rev.Lett. 106 (2011) 022502

Nuclear
Seminar

All interested
persons are
cordially
invited to
attend.