

Shell evolution and isomers below ^{132}Sn : Spectroscopy of neutron-rich Pd and Ag isotopes

Hiroshi Watanabe

School of Physics, Beihang University, Beijing, China

Abstract. Neutron-rich isotopes of Pd ($Z = 46$) and Ag ($Z = 47$) have attracted considerable interest in terms of the evolution of the $N = 82$ shell closure and its influence on the r-process nucleosynthesis. Such previously unreachable exotic nuclides have become accessible by means of in-flight fission of a high-intensity ^{238}U beam available at a new-generation RI-beam facility, the RI-Beam Factory (RIBF) in RIKEN Nishina Center. In this presentation, recent spectroscopic results of Pd and Ag isotopes obtained as part of the EURICA (EUROBALL-RIKEN Cluster Array) project at RIBF will be presented, with a particular focus on characteristic isomers, such as a seniority isomer in $^{128}\text{Pd}_{82}$ [1], long-lived high-spin isomers in $^{126}\text{Pd}_{80}$ [2] and $^{127}\text{Ag}_{80}$, isomers with proton-hole and neutron-hole excitations in $^{125,127}\text{Pd}_{79,81}$ [3], and low-lying β -emitting isomers in $^{123,125}\text{Ag}_{76,78}$ [4]. The nature of these isomers will be discussed in terms of the effect of proton-neutron interactions and the resultant shell evolution below the doubly magic nucleus ^{132}Sn in the framework of shell-model approaches.

References

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