Abstract Submitted
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In-beam gamma-ray spectroscopy of one-neutron knockout channel from ^{36}Mg S. MOMIYAMA, Department of Physics, University of Tokyo, P. DOORNENBAL, H. SCHEIT, S. TAKEUCHI, N. AOI, RIKEN Nishina Center, K. LI, Peking University, M. MATSUSHITA, Department of Physics, Rikkyo University, D. STEPPENBECK, RIKEN Nishina Center, H. WANG, Peking University, H. BABA, RIKEN Nishina Center, E. IDEGUCHI, Center for Nuclear Study, University of Tokyo, N. KOBAYASHI, Y. KONDO, Department of Physics, Tokyo Institute of Technology, J. LEE, RIKEN Nishina Center, S. MICHIMASA, Center for Nuclear Study, University of Tokyo, T. MOTOBAYASHI, M. TAKECHI, Y. TOGANO, K. YONEDA, RIKEN Nishina Center, H. SAKURAI, Department of Physics, University of Tokyo — An in-beam gamma-ray spectroscopy via one-neutron knockout reaction of ^{36}Mg was performed at RIBF to clarify the neutron single-particle configuration in ^{36}Mg. Neutron-rich Mg isotopes around ^{32}Mg are known to have a collective nature in spite of the shell-model magic number $N = 20$. In the more neutron-rich region than this area so-called "island of inversion," the deformation persists toward the $N = 28$ region. The large collectivity in the island of inversion is well explained with $\nu(sd)^{-2}$-$(fp)^{+2}$ particle-hole intruder configurations across the $N = 20$ shell gap. One-neutron knockout reactions are sensitive to the neutron single-particle configuration, and may therefore reveal the microscopic driving force for the large collectivity in the neutron-rich Mg isotopes towards $N = 28$. The level scheme of ^{35}Mg deduced experimentally will be discussed.

Satoru Momiyama
Department of Physics, University of Tokyo

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