



国立研究開発法人理化学研究所 仁科加速器研究センター  
第203回 RIBF核物理セミナー

RIKEN Nishina Center for Accelerator Based Science  
RIBF+CNS Nuclear Physics Seminar 2-Slot Series Plus!



## Structure evolutions in exotic nuclei and nuclear forces

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I will present an overview as to how the structure of exotic nuclei changes as a function of the neutron number (i.e., the distance from the beta stability line), in comparison to stable nuclei, as consequences of particular components of nuclear forces. The discussions will be kept as basic as possible. These components include central, tensor, spin-orbit and three-body forces. They produce characteristic effects, some of which can be considered to be paradigm shifts (from the common sense of stable nuclei). These changes become visible as the shell evolution, but also can be seen in nuclear shapes, for example, in the form of the shape evolution and the shape coexistence. I will point out that Landau's quantum liquid picture on nuclear structure gains a new aspect in exotic nuclei also due to proton and neutron composition of nuclei. Thanks to developments of RI beam facilities worldwide including RIBF, various new features connected to those evolutions have been observed. I will touch on calculations of physical observables, including recent developments made by Tokyo shell-model group, for instance, with the Monte Carlo Shell Model and the K-computer. I will comment that these developments have applications to other fields of science like double-beta decay and nuclear transmutation.

\* The talk will be given in English language..

July 1-2 (Wed./Thu.) 2015 13:30 ~  
RIBF Hall (rm.201), RIBF bldg., RIKEN

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