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Perspectives of physics of exotic nuclei beyond the shell evolution

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The shell evolution due to nuclear forces can be seen in many places on the nuclear chart, and the tensor and three-body forces play particularly important and characteristic roles. The recent experimental discovery of N=34 magic number in 54Ca at RIBF of RIKEN Nishina Center is a good example. I will overview the shell evolution. This shell evolution implies changes as functions of N and/or Z. I point out that this is Type I Shell Evolution, and there is Type II Shell Evolution occurring due to particular changes of configurations within the same nucleus. The tensor force shows very interesting and visible effects. Shape coexistence appears within narrow energy range in some cases. I will discuss basic and general features of this new mechanism affecting the structure of exotic nuclei, as well as concrete examples taken from recent studies on exotic Ni isotopes.

Notes

Thank you very much for assigning this talk to a plenary session. I hope to discuss future of the physics of exotic nuclei.

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