

Nuclear Structure and Correlations: From Stable to Unstable Nuclei

By

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Abstract

Nuclear Physics aims at understanding the fundamental properties of matter and the origin and evolution of elements in the universe. Most of the stable nuclei found on earth are created from the decay of unstable nuclei in the stars. The availability of short-lived nuclei produced at the radioactive-isotope beam (RIB) facilities worldwide in recent years has led to numerous discoveries of new phenomena in exotic nuclei, such as emergence of new magic numbers, neutron halos and skin. To understand the new properties of unstable nuclei, it is essential to obtain a detailed knowledge of correlations between nucleons and their mechanisms from the stability to instability.

In this talk, I will present two HKU experimental programs at the world's leading RIB facilities including RIKEN Nishina Center (Japan) and NSCL/MSU (United States): (i) In-beam gamma spectroscopy to investigate the new magicity of exotic nuclei (ii) Direct reaction spectroscopy to probe the nucleon correlations and driving forces. The setup and results of recent experiments as well as the detector projects will be discussed.

Biography

Jenny Hiu Ching LEE is an Assistant Professor at Department of Physics of The University of Hong Kong. She obtained her PhD and M.S. from Michigan State University. Her Research Interest is experimental nuclear physics for the studies of the nucleon correlations and the nuclear shell structure evolution. Experimental techniques include direct reactions, in-beam gamma spectroscopy and beta-decay spectroscopy.

All are Welcome!