国立研究開発法人理化学研究所　仁科加速器科学研究センター
第350回 RIBF核物理セミナー

RIKEN Nishina Center for Accelerator Based Science
The 350th RIBF Nuclear Physics Seminar

From Accelerator-Driven Experiments to Stars: The Role of the Nuclear Quasi-Continuum

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Abstract:

Understanding how atomic nuclei absorb and emit γ radiation is of central importance to nuclear physics, nuclear astrophysics and applications. Over the past decade, we have focused on developing and applying innovative experimental and analytical methods to study the nuclear quasi-continuum, with particular emphasis on photon strength functions (PSF) and nuclear level densities (NLD). These quantities are key inputs for modeling reaction rates within the Hauser-Feshbach statistical framework, which in turn supports nucleosynthesis calculations in stellar and explosive astrophysical environments, as well as a wide range of applied modeling efforts from medical isotope production and nuclear energy to nonproliferation and national security.

In this seminar, I will present an overview of recent advances in PSF and NLD measurements, including extensions to the Oslo Method, as well as newly established techniques such as the Shape Method. These analytical approaches enable the systematic and consistent extraction of statistical nuclear properties across wide regions of the nuclear chart. I will highlight how these efforts have contributed to studies of i-process and p-process nucleosynthesis.

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Zoom link: https://riken-jp.zoom.us/j/96577967679?pwd=YmgrOW9pTmNhUkIvODFycEdRSUpuQT09

October 13th (Tue), 2026 13：30～

at/via RIBF Hall or via Zoom

* The talk will be given in English language.

Contact: Nuclear Physics Seminar Organizing Committee