

RCNP

NUCLEAR PHYSICS

EXPERIMENT SEMINAR

Title Charge-exchange reaction studies combined with γ -ray spectroscopy for astrophysical applications

Speaker Shumpei Noji (RCNP, Osaka University)

Date / Time Tuesday 16th June 2015, 16:00

Place Lecture room 1, 6th floor, RCNP

Abstract:

Charge-exchange reactions at intermediate energies are a powerful tool for studying the spin-isospin structure of nuclei. They become even more so when combined with high-resolution γ -ray spectroscopy, allowing one to pin down specific excitations with precise energy determination or providing new spin-isospin selectivities that are not possible with conventional reaction probes. They are useful in particular for studying stellar electron captures, supernova nucleosynthesis, and a variety of other astrophysical phenomena. In this seminar, I will discuss some of these instances including recent results of the $(t, {}^3\text{He}+\gamma)$ experiments with the germanium detector array GRETINA and the S800 spectrometer at NSCL/MSU. Further, I will describe an upcoming $({}^6\text{Li}, {}^6\text{Li}'[3.56 \text{ MeV}]+\gamma)$ experiment with a Clover germanium detector array CAGRA coupled to the Grand Raiden spectrometer.

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