

Date/Time: 7/12 (Thu.) 15:30 -

Title: Synthesis of the Trans-Iron Elements in Stars

Speaker: Prof. Nobuya Nishimura (YITP, Kyoto University)

Place: Kenkyu-Honkan 1F, Meeting Room 1

Abstract:

Stellar nucleosynthesis beyond iron-group nuclei provides additional problems that we do not encounter when studying nucleosynthesis processes for light nuclei. Besides ambiguity in the determination of astrophysical sites/conditions, uncertainties in nuclear physics inputs have significant impacts on the theoretical nucleosynthesis predictions.

In this talk, I present recent results of comprehensive nucleosynthesis studies, focusing on the uncertainties of relevant nuclear reactions and decays. The evaluated uncertainty range for the several nucleosynthesis processes, e.g., s- and r-processes, gamma-process and n-p-process, are discussed. I also show the lists of "key reactions", which have strong impacts on the nucleosynthesis yields, based on our Monte-Carlo based analysis.