

"Nuclear Astrophysics" 第1回

Prof. Karlheinz Langanke (GSI)

講義内容

The lectures on Nuclear Astrophysics will focus on the nuclear physics aspect of the origin of the elements in the Universe and of the various stellar objects which contribute. There will be four lectures.

Lecture 1 focuses on nuclear fusion reactions at the low astrophysical energies and on hydrostatic stellar burning. Special emphasis is given to solar hydrogen burning and solar neutrinos.

Lecture 2 discusses the fate of massive stars as core-collapse supernovae. The role played by weak-interaction processes like electron capture and neutrino reactions on nuclei is stressed as is explosive nucleosynthesis.

Lecture 3 deals with the production of elements heavier than iron by the slow and rapid neutron capture processes. In particular the nuclear needs to model r-process nucleosynthesis will be discussed.

Lecture 4 focuses on explosive events in binary systems. Besides a brief discussion of thermonuclear (type Ia) supernovae, the lecture talks about explosive hydrogen burning important for novae and x-ray bursters.

Date : Nov. 17(Mon.)-18(Tue.) 2008

13:30-15:00 1 コマ目

休 憩

15:30-17:00 2 コマ目

Place : Nishina Hall

This Lecture will be given in English

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