Contribution ID: **39** Type: **Invited Lecture**

Death of Massive Stars: Supernovae and Gamma-Ray Bursts with Explosive Nucleosynthesis

Monday, 13 June 2016 16:00 (1h 30m)

Massive Stars explode as supernovae, and very special supernovae explode as gamma-ray bursts. The explosion mechanism of supernovae is "almost" understood now, while the explosion mechanism of gamma-ray bursts is hardly known. In supernovae/gamma-ray bursts, lots of heavy nuclei are produced by explosive nucleosynthesis. Even r-process nucleosynthesis may happen in special supernovae including gamma-ray bursts. In this lecture, I would like to introduce the current understanding for the explosion mechanisms of supernovae & gamma-ray bursts. Then I would like to introduce explosive nucleosynthesis in supernovae. Finally, the possibility of r-process nucleosynthesis in special supernovae such as jet-induced supernovae & gamma-ray bursts is introduced, as well as another possibility of r-process nucleosynthesis in binary neutron star mergers.

Primary author: Dr NAGATAKI, Shigehiro (Astrophysical Big Bang Laboratory)

Presenter: Dr NAGATAKI, Shigehiro (Astrophysical Big Bang Laboratory)

Session Classification: Nagataki