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The explosion mechanisms of core-collapse supernovae: how to blow up massive stars

Wednesday, 15 June 2016 09:00 (1h 30m)

In this lecture, we mainly focus on the explosion mechanisms of core-collapse supernovae. After we briefly review the standard scenario, we talk about a recent status of numerical models where three-dimensional general-relativistic hydrodynamics code including both detailed weak interactions and nuclear equations of state is now meeting with sophisticated neutrino transport scheme. We then discuss the multi-messenger signatures of gravitational waves, neutrinos, and electromagnetic waves expected from these self-consistent models, which should be important to unveil the mystery of the central engine hidden deep under the thick veils of massive stars.

Primary author: Prof. KOTAKE, Kei (Fukuoka University)

Presenter: Prof. KOTAKE, Kei (Fukuoka University)

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