



Contribution ID: 324

Type: Poster

Neutrino-Nucleus Interactions in Central Engine of Core-Collapse Supernovae

This poster summarizes which nuclear particles emit, absorb, and scatter with neutrinos in central engines of core collapse supernovae. Our numerical simulations show that neutrino interactions with nucleons and nuclei have great impacts on the results of supernova simulations. Before the core-bounce, neutron-rich heavy nuclei like Zn^{80} are dominant at the center of collapsing cores and their neutrino absorption greatly affect the neutrino observations and following dynamics of the core. After the core-bounce, heavy nuclei are dissolved to nucleons and light clusters between the expanding shock wave and the new-born neutron star. The neutrino interactions of nucleons, deuterons and alpha particles greatly affect the shock-wave dynamics and supernova explosion of the outer envelopes.

Mini-abstract

Numerical study of neutrino-nucleus interactions in central engine of core-collapse supernovae

Primary author: FURUSAWA, Shun (Tokyo University of Science)

Presenter: FURUSAWA, Shun (Tokyo University of Science)

Session Classification: Poster session 3