

# KEK THEORY CENTER

## KEK理論センター

$$\frac{1}{\sqrt{2}} \int \frac{e^{-i\omega t}}{\tau^2 + t^2}$$



SITEMAP 品

ENGLISH

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HIGH ENERGY ACCELERATOR RESEARCH ORGANIZATION  
THEORY CENTER

### Seminar

## Neutrino oscillations in core-collapse supernovae and their effects on nucleosynthesis (in English)

SPEAKER : Mr. Hirokazu Sasaki (The University of Tokyo)

DATE : Feb. 7th (Thu.) 15:30-

PLACE : Kenkyu Honkan 3F, Seminar Room

Neutrinos are produced inside astrophysical sites such as the Sun, core-collapse supernovae, blazars and neutron-star mergers. Such neutrinos would change their flavors significantly owing to refractive effects of background electrons and neutrinos themselves. In core-collapse supernovae, large numbers of neutrinos are produced and emitted from the proto-neutron star after core-bounce. It is considered that collective neutrino oscillations are caused by self-interacting neutrinos near the proto-neutron star (~100 km). Such refractive effect increases energetic (anti)electron neutrinos, which is expected to affect supernova explosion and nucleosynthesis. We show a numerical result of neutrino oscillations in core-collapse supernovae and mention how collective neutrino oscillations enhance nucleosynthesis in neutrino-driven winds. Our result would be helpful to more realistic studies to reveal the origin of solar-system isotopic abundances of p-nuclei.

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