

## Prospects of Neutrino Physics



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### Tomography by neutrino pair beam

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The idea of neutrino tomography is the imaging of the Earth's interior structure by using the neutrino. We assume the neutrino pair beam which has recently been proposed as neutrino source. The beam produces a large amount of neutrino and antineutrino pairs from the circulating partially stripped ions and provides the possibility to measure precisely the energy spectrum of neutrino oscillation probability together with a sufficiently large detector. It is shown that the pair beam gives a better sensitivity to probe the Earth's crust compared with the neutrino sources at present. In addition we present a method to reconstruct a matter density profile by means of the analytic formula of the oscillation probability in which the matter effect is included perturbatively to the second order.

**Presenter:** OKUI, Hisashi

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