ID de Contribution: **52** Type: **Non spécifié**

COBAND, Cosmic Background Neutrino Decay Search

jeudi 19 juillet 2018 14:00 (30 minutes)

We present a status of COBAND project for an experimental search for COsmic BAckground Neutrino Decay. The cosmic background neutrino (CνB) is predicted in the standard cosmology, while the heaviest neutrino is expected to be able to decay to lighter neutrinos with photons in the FIR region. Neither the CνB nor the neutrino decay is, however, experimentally established yet. We, thus, search for photons come from the neutrino decays in the CνB. The photon spectrum from the neutrino decays in the CνB is expected to have an unique structure with sharp edge at a short wavelength end around 50um against the overwhelming zodiacal emission foreground as well as cosmic infrared background.
The detectors are required to measure the photon spectrum in the FIR region at 0.1% accuracy level to achieve a sensitivity in the order of 10^14 years to the heaviest neutrino lifetime for a 200-second measurement with a sounding rocket experiment. We have been developing far-infrared photo-detectors based on superconductor tunnel junction (STJ) sensors in combination with cryogenic amplifiers as the key technology in the project. In this talk, we focus on the status of the developments of STJ as well as the cryogenic amplifiers.

Auteur principal: TAKEUCHI, Yuji (Univ. of Tsukuba)

Orateur: TAKEUCHI, Yuji (Univ. of Tsukuba)

Classification de Session: Future projects