



Contribution ID: 294

Type: **Parallel talk**

LiF experiment for keV sterile neutrino search

Wednesday 30 August 2023 14:45 (15 minutes)

We developed a simple small-scale experiment to measure the beta decay spectrum of ${}^3\text{H}$. This research aims to investigate the presence of sterile neutrinos in the keV region. Tritium nuclei were embedded in a $1 \times 1 \times 1 \text{ cm}^3$ LiF crystal from the ${}^6\text{Li}(n,\alpha){}^3\text{H}$ reaction. The energy of the beta electrons absorbed in the LiF crystal was measured with a magnetic micro-calorimeter at mK temperatures. We present the current status of the experiment including the energy calibration study. Moreover, we present the project plans for ${}^3\text{H}$ measurement and their expected sensitivities for keV sterile neutrino search.

Submitted on behalf of a Collaboration?

No

Authors: Prof. KIM, SunKee (Seoul National University); LEE, YongChang (Institute for Basic Science (Republic of Korea) & Seoul National University (Republic of Korea)); Prof. KIM, YongHamb (IBS(Institute for Basic Science))

Presenter: LEE, YongChang (Institute for Basic Science (Republic of Korea) & Seoul National University (Republic of Korea))

Session Classification: Neutrino physics and astrophysics

Track Classification: Neutrino physics and astrophysics