



## ICEHAP Seminar

**Date** April 18 Thu. 10 : 00 ~ 11 : 30

**Location** [ICEHAP Office \(Engineering Research Bldg.1 Room609-1\)](#)

**By** Dr. Akitaka Ariga (Chiba University)

**Title**

**『First neutrino cross section measurements at  
TeV energies by the LHC-FASER experiment』**

**Abstract**

The Large Hadron Collider (LHC) is copiously producing neutrinos in forward direction of proton-proton collisions. This neutrino beam includes three flavors and both neutrino and antineutrinos at unexplored TeV energies. Exploiting the collimated neutrino beam, the FASER experiment is studying the behaviour of TeV neutrinos with nano-precision "FASERnu" detector, a massive component of the FASER detector with a 1.1-ton target mass. Through the Run 3 of LHC operation in 2022-2025, we expect to collect a total of  $O(10^4)$  neutrino interactions, which allows us to study Lepton Flavor Universality in neutrino scattering and also the production/interaction of neutrinos closely related to IceCube.

In this seminar, I will discuss the fresh results from the FASER experiment in the analysis of a part of 2022 data, including the first neutrino cross section measurements at TeV energies.