International Center for Hadron Astrophysics
ICEHAP CHIBA UNIVERSITY

ICEHAP Seminar

Date Nov. 1 Friday 15：30～17：30

Location ICEHAP Office (Engineering Research Bldg.1 Room609-1)

By **Dr. Maximilian Meier** (ICEHAP, Chiba University)

Title

『Neutrinos at the Highest Energies: IceCube's Window into Ultra-High-Energy Cosmic Rays』

Abstract

Ultra-high-energy cosmic rays (UHECRs) produce astrophysical neutrinos (TeV+) inside their sources and so-called cosmogenic neutrinos (PeV+) on their journey through the universe. These neutrinos are unique messengers from the distant and violent universe, able to probe the sources of UHECRs. The IceCube Neutrino Observatory is the largest neutrino detector in the world, instrumenting a cubic kilometer of Antarctic ice to catch these rare and elusive particles.

In this talk I will introduce IceCube's recent observation of astrophysical tau neutrinos and discuss future implications for multi-messenger astrophysics. Additionally, I will present IceCube's world leading limit on the neutrino flux at the highest energies. For the first time the non-observation of cosmogenic neutrinos puts serious constraints on the composition of UHECRs.