



千葉大学大学院理学研究院附属

ハドロン宇宙国際研究センター

International Center for Hadron Astrophysics

# ICEHAP Seminar

**Date** Aug. 31 Monday 10 : 00~11 : 00

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

**By** Dr. Nobuhiro Shimizu (Osaka University)

**Title**

**『Search for New Physics via neutral kaon decays』**

## Abstract

The KOTO experiment searches for the rare decay of the neutral kaon,  $KL \rightarrow \pi^0 \nu \bar{\nu}$ . The branching ratio is heavily suppressed in the standard model ( $3 \times 10^{-11}$ ) and its observation may reveal hints of New Physics. To measure the rare decay, large statistics of KL and sufficiently high signal-to-noise ratio are necessary. The presenter introduces recent updates of KOTO: the CsI calorimeter upgrade to discriminate neutrons and photons, and studies of charged kaon backgrounds. In addition, a new physics search via Lorentz-violating decay,  $KL \rightarrow \pi^0 \gamma$  will be explained.

**Location:** Neutrino Astrophysics Department

@ Engineering Research Bldg. 6<sup>th</sup> floor



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