



Contribution ID: 249

Type: Oral Presentation

## New results on the search for rare kaon events with the KOTO detector

*Monday 29 July 2019 14:40 (20 minutes)*

The KOTO experiment was designed to observe and study the  $K_L^0 \rightarrow \pi^0 \nu$

The signature of the decay is a pair of photons from the  $\pi^0$  decay and no other detected particles. For the measurement of the energies and positions of the photons, KOTO uses a Cesium Iodide (CSI) electromagnetic calorimeter as the main detector, and hermetic veto counters to guarantee that there are no other detected particles.

KOTO's initial data was collected in 2013 and achieved a similar sensitivity to the E391a result [3]. We completed hardware upgrades and had the first major physics runs in 2015. This talk will present KOTO's new results on the search for detecting  $K_L^0 \rightarrow \pi^0 \nu \bar{\nu}$  [4].

[1] J. Brod, et al.: Phys. Rev. D. 83, 034030 (2011)\

[2] J. Ahn et al., Phys. Rev. D. 81, 072004 (2010)\

[3] J. K. Ahn et al., Prog. Theor. Phys. 021C01 (2017)\

[4] J. K. Ahn et al., Phys. Rev. Lett. 122, 021802 (2019)

**Author:** Dr BECKFORD, Brian (University of Michigan)

**Presenter:** Dr BECKFORD, Brian (University of Michigan)

**Session Classification:** Quark & Lepton Flavor

**Track Classification:** Quark & Lepton Flavor