



MEETING OF THE AMERICAN PHYSICAL SOCIETY DIVISION OF PARTICLES AND FIELDS

Contribution ID: 382

Type: **Poster**

Data Acquisition and Triggering for the KOTO Experiment

Monday, 31 July 2017 19:01 (1 minute)

The KOTO experiment at the J-PARC research facility in Tokai-mura, Japan aims to observe and measure the rare decay of the neutral kaon, $KL \rightarrow \pi^0 \nu \bar{\nu}$, in which a neutral kaon decays to a neutral pion and a neutrino antineutrino pair. This decay has a Standard Model predicted branching ratio of $(3.00 \pm 0.30) \times 10^{-11}$. While this decay is extremely rare, it is one of the best decays for studying charge-parity (CP) violation in the quark sector. Because the signal decay has such a low branching ratio, the data acquisition (DAQ) system for the KOTO experiment uses three levels of trigger cuts to selectively record events of interest and discard background events. The KOTO DAQ system is designed to have a highly optimized signal acceptance and background rejection due to the high trigger rate. This poster will focus on these details and how the triggers and DAQ system address the physics requirements of the detectors.

Primary author: Ms HUTCHESON, Melissa (University of Michigan)

Presenter: Ms HUTCHESON, Melissa (University of Michigan)

Session Classification: Poster Session and Reception

Track Classification: Particle Detectors