

## Séminaire LAL

***Oskar Hartbrich***  
(University of Hawaii)

**Mercredi 24 juillet 2019 à 11h00**

### *TOP – The Belle II Barrel Particle Identification Detector*

The Time of Propagation (TOP) detector is a novel particle identification system developed for the barrel region of the Belle II experiment at the SuperKEKB collider at KEK in Tsukuba, Japan. The detector is based on reconstructing the opening angle of the Cherenkov cones generated in its quartz radiator bars by measuring the propagation time of individual Cherenkov photons to the Micro-Channel Plate PMT sensor plane. The readout electronics for the 8192 channels of the TOP system are built around a switched capacitor array waveform sampling ASIC operating at 2.7GSa/s. Acquired waveforms are processed in real time in the front end electronics, extracting the individual timing of detected photons to better than 100 ps.

After a commissioning run with first beam collisions starting in spring 2018, the final inner tracking system is now installed in the Belle II detector, and the physics programme and luminosity rampup is underway since March 2019.

This presentation will give an overview of the operation principles of the Belle II TOP detector, its construction and installation and the current experiences and results from commissioning, calibration and operation in the first Belle II physics runs up until now.

***Salle 101*** - Bât. 200, Orsay

Organisation :

Joao Coelho - Thibaud Louis - Aurélien Martens - Dimitris Varouchas (LAL) - [seminaires@lal.in2p3.fr](mailto:seminaires@lal.in2p3.fr)

LAL web : <http://www.lal.in2p3.fr>

Indico: <https://indico.lal.in2p3.fr/category/31/>