

# The Event Timing Finder for the Central Drift Chamber Level-1 Trigger at the Belle II experiment

Thursday, May 27, 2021 5:12 AM (18 minutes)

The Level-1 trigger system of the Belle II experiment is designed to select physics events of interest with almost 100% efficiency. In terms of event timing decision, the level-1 trigger is required to have an accuracy of less than 10 ns. The Central Drift Chamber (CDC) level-1 trigger provides the event timing information as one of the level-1 timing sources. We developed the new algorithm to measure the event timing with an accuracy of about 10 ns based on the CDC hit timing. Two-dimensional charged track reconstruction by Hough transformation was utilized to reduce high background hits. We used a new-developed general-purpose FPGA board (Universal Trigger board 4) for this module for the first time. We will report the performance of the new algorithm using e+e- collision data collected in 2020.

## TIPP2020 abstract resubmission?

No, this is an entirely new submission.

## Funding information

**Primary authors:** SUE, Yuki (Nagoya University); HANWOOK, Bae; IJIMA, Toru (Nagoya University); IWASAKI, Yoshihito (High energy accelerator organization); KOGA, Taichiro (High energy accelerator organization); LAI, Yun-Tsung (IPMU); NAKAZAWA, Hideyuki (National Taiwan University); UNGER, Kai Lukas (Karlsruhe Institute of Technology (KIT))

**Presenter:** SUE, Yuki (Nagoya University)

**Session Classification:** Posters: Trigger and DAQ

**Track Classification:** Readout and Data Processing: Readout: Trigger and DAQ