

Study of the performance for identification of charged kaons in the Belle II experiment

Collisions produced in the interaction region of the Belle II experiment produce as final states charged and neutral particles that travel across the different subdetectors. A proper charged particle identification system is a critical requirement for the success of the physics program at Belle II. In particular, the tau lepton physics program require the identification of charged kaons from reconstructed tracks keeping fake rates low. In the proposed project, the student will use data collected from collisions between 2019-2022 at the Belle II experiment for tagging tau pair events containing a kaon, and compare the efficiency between data and simulations of the global kaonID calculated from information produced in the subdetectors, aiming to determine correction factors for simulated collisions.

Field

B1: Particle physics analysis (software-oriented)

DESY Place

Hamburg

DESY Division

FH

DESY Group

Belle II

Special Qualifications:

Basic knowledge of Python and notions of machine learning are desired but not required.

Primary author: HERNANDEZ VILLANUEVA, Michel (BELLE (BELLE Gruppe))