Contribution ID: **39** Type: **not specified**

DESY CMS - Tracker Alignment: Studies with Phase 2 detector geometry

The DESY CMS tracker alignment group is a team responsible for
development and operation of the software tools performing the alignment of the CMS silicon tracker detector. In the context of this project, the
student will join the DESY tracker alignment group, learn to work with the data-driven methods used to derive the alignment parameters & their
validation, and participate in the ongoing group efforts. The CMS Phase-2 Upgrade will significantly improve the CMS detector to
tackle the challenging conditions of the high luminosity LHC (HL-LHC). The installation of some of the components of the upgraded detector systems started in the Long Shutdown 2 (LS2) and is planned to be completed during the Long Shutdown 3 (LS3). The new CMS Silicon-Tracker constitutes one of the pillars of the upgrade with a significant increase in the number of channels and improved spatial resolution. In the context of this project, the track-based alignment of the Phase 2 tracker geometry will be performed with simulated events under the HL-LHC pileup conditions using the Millepede II algorithm.

Group

FH - CMS

Project Category

B1. Physics Data Analysis and Performance (software-oriented)

Special Qualifications

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