Physics Performance Studies of the International Large Detector at the FCC-ee

The ILD detector concept has originally been developed for the International Linear Collider. Detailed simulations gauged against the performance of prototype components have shown that ILD in its ILC incarnation is ideally suited to pursue the physics program of a linear Higgs factory as well as of a higher energy e+e-collider. Recently, the ILD collaboration has started to investigate how the detector concept would need to be modified to operate successfully in the experimental environment of a circular Higgs factory like for instance FCC-ee. In particular, the interaction region, or machine-detector interface (MDI), requires substantial changes to make room for accelerator elements and to withstand backgrounds. Finally, the measurement precision and accuracy of this adapted model is to be studied.

Intern Role Description:

- support the efforts of designing a FCC-ee compatible version of the ILD detector concept
- co-development of a software framework for the systematic investigation of the effects of various underground processes in detectors
- evaluating the impact of different detector design options on physics studies
- possibly, improvement of track reconstruction software in modular detector concepts and facilitation of plug-and-play studies for future detectors
- · possibly, co-development of a software framework for analyzing tracking performance in detectors

Group

FH-FTX-SLB

Project Category

B1. Physics data analysis and performance (software-oriented)

Special Qualifications

- experience in data analysis using Python or ROOT/C++
- experience with Unix, git, python and C++ of advantage

DESY Site

Hamburg

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