Contribution ID: **69** Type: **Oral**

Full simulation of the IDEA detector at FCC-ee using the key4hep framework

Wednesday, 17 May 2023 08:30 (15 minutes)

The FCC-ee is a proposed future e^+e^- collider capable of producing all SM particles in large quantities and clean experimental conditions. Up to four experiments can detect the collision products, with IDEA being one of the proposed detector concepts at FCC-ee. IDEA needs to fulfil requirements similar to experiments at other proposed lepton colliders such as reliable particle identification, efficient flavour tagging and superior momentum resolution.

IDEA consists of a vertex detector made out of depleted monolithic active pixel sensor (DMAPS), an extremely light drift chamber and timing layer for tracking, a dual-readout calorimeter and muon chambers in the low-mass solenoid return yoke. This contribution presents the progress of the implementation of the IDEA detector in full simulation using the key4hep and DD4hep framework used by many future collider communities.

An emphasis will be put on the design and full simulation implementation of the vertex detector which is crucial for many of the experimental goals of the FCC-ee program. The related R&D on DMAPS will be briefly discussed as well.

Primary author: ILG, Armin (University of Zürich)

Presenter: ILG, Armin (University of Zürich)

Session Classification: Physics and Detectors: Track 2

Track Classification: Physics and Detectors: Track 2: Analysis and Reconstruction