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Status and Perspectives for FCC-ee Detector Background Studies

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The Future Circular Collider electron-positron (FCC-ee) is a proposed high-energy lepton collider that aims to reach unprecedented precision in the measurements of fundamental particles. However, several beam related processes produce particles in the Machine-Detector Interface (MDI) region, which can adversely affect the measurements' accuracy. This contribution presents a study of the beam-induced backgrounds at FCC-ee. The study uses the turnkey software Key4HEP to estimate the occupancy levels induced by beam-beam interactions, beam losses and Synchrotron Radiation in several sub-detectors of CLD, IDEA and ALLEGRO detector concepts.

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