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Overview of FLUKA Energy Deposition and Design Studies for the LHC

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In order to assess the energy deposition in sensitive LHC components, extensive simulations were performed with the Monte Carlo cascade code FLUKA. In many cases specialized solutions needed to be found, challenging in several aspects, i.e., from the calculation as well as from the design point-of-view.

Depending on the problem, detailed geometrical implementations, an accurate consideration of magnetic fields, tracking of particles over hundreds of meters, grazing angles and special biasing need to be considered.

This presentation gives a brief overview over the performed calculations, points out important input- and output parameters and the respective assumptions in the simulation as well as tries giving an overview of related uncertainties, the latter being of statistical and systematic nature.

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