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Energy deposition in the FCC-hh EIR

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The FCC-hh interaction region is heavily impacted by the collision debris, generated at the interaction point. In order to assess its effects on the triplet as well as on the matching section magnets, FLUKA simulations were performed assuming the ultimate integrated and instantaneous luminosity. In this presentation, the obtained results will be discussed for both the vertical and the horizontal crossing schemes.

In order to avoid long term fatal damage to the superconducting materials and insulators as well as magnet quenching, different mitigation strategies were explored. Equally the effects of protection devices like collimators and masks, the regular change of the crossing scheme and the optimisation of the magnets design were studied. Additionally, the effectiveness of these countermeasures will be discussed in this talk.

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