

Collective Effects in the Interaction Region of FCC-ee

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FCC-ee is an e⁺e⁻ circular collider designed to accelerate and collide electron and positron beams. One of the most critical aspects to be addressed in the design phase is the intensity limitation due to collective effects which can produce instabilities, limit the accelerator operation and reduce its performance. The studies presented in this contribution are focused on the electromagnetic interactions of the beam with the surrounding environment in the accelerator Interaction Region. In particular, we will analyse the wake fields induced by the beam, the resulting power loss, the heat load due to possible high order modes that could remain trapped and the electron cloud induced heat load in the two final focusing magnets and field-free region.

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