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## Synchrotron radiation studies for the FCC-ee interaction region

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The FCC-ee is a proposed high-luminosity circular electron-positron collider that will operate with beam energies spanning from 45.6 to 182.5 GeV, yielding a total of 50 MW of synchrotron radiation power per beam. The lattice design upstream of the interaction point is based on weak dipoles and long straight sections combined with a 30 mrad crossing angle. The optics design provides a flat beam at the IP while integrating an anti-solenoid and detector solenoid.

The paper summarizes the design principle and performance of the FCC-ee synchrotron radiation collimation scheme and provides insights into the synchrotron radiation simulations within the interaction region, conducted using the GEANT4 toolkit BDSIM. Special attention is given to the complexity of the transverse beam tails, including their width and particle density, providing valuable perspectives for the design of an effective synchrotron radiation collimation system.

### Footnotes

### Funding Agency

### Paper preparation format

LaTeX

### Region represented

Europe

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