

Power losses in the ILC/CLIC 20 mrad extraction line at 1 TeV

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We have performed a detailed study of the power losses along the post-collision extraction line of a TeV e+e- collider with a crossing angle of 20 mrad at the interaction point. Five cases were considered: four luminosity configurations for ILC and one for CLIC. For all of them, the strong beam-beam effects at the interaction point lead to an emittance growth for the outgoing beams, as well as to the production of beamstrahlung photons and e+e- coherent pairs. The power losses along the extraction line, which are due to energy deposition by a fraction of the disrupted beam, of the beamstrahlung photons and of the coherent pairs, were estimated in the case of ideal collisions, as well as with a vertical position or angular offset at the interaction point.

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