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Coherent plane ground wave impact on the FCC-ee beam centroid

Monday 2 June 2025 16:00 (2 hours)

The FCC-ee is a collider, proposed after the LHC era, based on a ring of approximately 90 km of circumference. It will have to be able to accommodate beams running at half the z-pole and $t\bar{t}$-pole with vertical Interaction point beam size less than 40 nanometer at the z. In the present studies, coherent ground motions are being explored with particle tracking tools such as MAD-X and analytics code. The effect of parameters, such as harmonics, phase, orientation, defining global vertical sine waves like motion, are hence being detailed. At the time of writing, several lattices are subject to investigations. The differences in term of beam centroid for the main lattices and energy running will also be exposed. The impact of these motions of the machine detector interface quadrupoles is discussed.

Footnotes

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