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First studies on error mitigation by interaction point fast feedback systems for FCC-ee

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During operation, the Future Circular electron-positron Collider (FCC-ee) will be subject to vibrations from mechanical sources and ground motion, resulting in errors with respect to the closed orbit. To achieve physics performance, luminosity and beam lifetime must be kept to design specifications. To correct for errors at the IPs, a fast feedback system is required. In this paper, we present the tolerances for the allowable beam offsets at the interaction points (IPs) and propose a fast feedback system to address these errors, with the methods of detecting and correcting errors discussed.

Footnotes

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