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## Orbit-response based optics corrections for FCC-ee

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The new generation of storage rings aims to push the limits of the luminosity and the size of the electrons beam that can be achieved. One of such planned machines is the  $e^+/e^-$  Future Circular Collider (FCC-ee) with 100km circumference. The FCC-ee lattice components can be subject to random misalignments and field errors. These errors can adversely affect the beam's closed orbit and beam optics properties, resulting in a significant reduction in the future collider's performance. This issue requires linear optics correction methods to be utilized, One of these methods is linear optics from closed orbit (LOCO) in which the measured ORM is fitted to the lattice model in order to determine the appropriate quadrupole strengths. In this study we demonstrate the application of closed orbit-based optics correction LOCO for FCC-ee lattices.

The code was implemented using the Python accelerator toolbox (PyAT). The impact of alignment errors on FCC the lattice optics parameters were studied.

### Funding Agency

### Footnotes

### I have read and accept the Privacy Policy Statement

Yes

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