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Linear optics compensation for the HEX superconducting wiggler at NSLS-II

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At the NSLS-II ring, a 1.2 m long superconducting wiggler with the maximum 4.34T magnetic field has been installed at a low- β straight section (cell 27) to drive the high energy engineering X-ray scattering (HEX) beamline. To mitigate the potential performance degradation due to the linear optics distortion, a local compensation scheme was adopted and confirmed with the online beam measurement. A feedforward control to enable a dynamic compensation of the linear optics distortion was deployed. It can maintain the storage ring lattice performance when the device main coil current ramps.

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Footnotes

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Yes

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