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An improved method for linear optics and coupling correction based on closed orbit modulation

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A new method is introduced to process the closed orbit modulation by two corrector magnets modulated with sinusoidal waveforms. The new method can extract linear optics information from tens of thousands of orbits and represent such information with only a few parameters per beam position monitor. The concise form makes it easy to fit for linear lattice errors. The method has been demonstrated for linear optics correction on SPEAR3 and NSLS-II storage rings. One iteration of optics correction, including data taking and lattice fitting, takes only tens of seconds.

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Footnotes

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Yes

Primary author: HUANG, Xiaobiao (SLAC National Accelerator Laboratory)

Co-author: YANG, Xi (Brookhaven National Laboratory)

Presenters: HUANG, Xiaobiao (SLAC National Accelerator Laboratory); YANG, Xi (Brookhaven National Laboratory)

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