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Experimental measurements for extracting nonlinear invariants

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Nonlinear integrable optics are a promising alternative approach to lattice design. The integrable optics test accelerator (IOTA) at Fermilab has been constructed for dedicated studies of magnetostatic elliptical elements as described by Danilov and Nagaitsev. The most compelling verification of correct implementation of the NIO lattice is direct observation of the analytically expected invariants. This report outlines the experimental and analytical methods for extracting the nonlinear invariants of motion from data gathered in the last IOTA run.

Footnotes

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North America

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