COSY INFINITY

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Abstract

We will demonstrate the code COSY INFINITY Version 9. Besides the known feature of computations of high order Taylor transfer maps based on differential algebras, the latest version has many new features, many of them using algorithms only possible with differential algebras and Taylor models. Aside from conventional beam dynamics design and optimization tools, we will focus on new features, including rigorous global optimization, computation of remainder bounds for high order maps, minimal symplectic tracking in the EXPO framework, and the ability to integrate high-order maps through user-specified fields. Specific applications will focus on maps of absorbers, wedges, and novel non-cylindrical multipole elements.

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