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Status and recent developments of python Accelerator Toolbox

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The Accelerator Toolbox (AT) is a multipurpose tracking and lattice design code relying on a C tracking engine. Its MATLAB interface is widely used in the light source community for beam dynamics simulation and can be integrated in control systems through the MATLAB Middle Layer. In recent years major effort was made to develop a python interface to AT: pyAT. In this framework, several features were added to pyAT, in particular, the introductions of the 6D optics dynamic aperture and lifetime calculation, single and multi-bunch collective effects simulations and parallelized tracking capabilities. A python ring simulator was also developed based on pyAT for offline modeling of the accelerator control system. Following a presentation of the structure and main features of AT, an overview of these recent developments is provided.

Funding Agency

Footnotes

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Yes

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