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## Status of the time-dependent FEL code Genesis 1.3

*Wednesday, 22 May 2024 16:00 (2 hours)*

Version 4 of the widely used time-dependent FEL code Genesis 1.3 has been released. The C++ code keeps the entire bunch in memory and thus allows for self-consistent effects such as wakefields or long-range space charge fields. With sufficiently allocated distributed memory, Genesis 1.3 can represent each individual electron. This solves the problem of the shot noise statistics at any arbitrary frequency in the simplest way and allows for sorting and redistribution of particles among the computer cores for advanced FEL applications such as the Echo-Enabled Harmonic Generation schemes. This presentation reports on the new physics added to the code as well as features which simplify the setup of the simulations as well and the ability to link user-made libraries to adapt to the specific needs of each user.

### Footnotes

### Funding Agency

### Paper preparation format

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### Region represented

Europe

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