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LASY: an open-source Python library for easy interfacing of laser pulses between experiments and simulations

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While multiple works demonstrated the importance of using realistic laser profiles for simulations of laser-plasma accelerators to accurately reproduce experimental measurements, the handshake between experiments and simulations can be challenging. Similarly, transferring a laser pulse from one code to another, as needed for start-to-end simulations, may require some error-prone manipulations. In this poster, we will present LASY (which stands for LAsEr manipulations made eaSY), a new open-source Python library to simplify these workflows. Developed in an international collaboration between experimental, theoretical and computation physicists, LASY can be used to create a laser profile from a measurement, from a simulation, or analytic, propagate it, manipulate it (e.g., convert from field to envelope, or from vector potential to electric field) and write it to file in compliance with the openPMD standard. The profile can then be used as input by any simulation code that adopts the standard. We will show use cases and discuss the accuracy of this method.

Available for oral presentation in a session

No

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