

Software for laser plasma interactions: open-source workbench in Weizmann Institute of Science

The Center for Intense Laser Science at WIS is a new laboratory created around the 2x100TW laser system dedicated to laser plasma interaction, and, in particular, to the particles and radiation production in the laser plasma accelerators. In order to design and interpret the upcoming experiments a set of the proper numerical tools is needed, and today numerous open-source solutions exist to treat every aspect of this work. In this talk I will briefly review the software requirements for our research, and discuss the choice of the codes which was made for our numerical workbench. The particular place in this software collection is given to the components of BLAST toolkit – Particle-In-Cell codes WARP and FBPIC. At the end I will present an example of the laser-plasma driven free-electron laser source modeled from start to end with the open-source instruments.

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