

Influence of radiation reaction force on ultraintense laser-driven ion acceleration

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Readme file to accompany data set

This dataset contains two types of files. These are: (1) *.dat files and (2) *.in files.

(1) The *.dat files contain the data plotted in the figures in the corresponding publication.

(2) The *.in files are the input files for the PICLS code used to simulate the laser absorption, fast electron generation, synchrotron radiation production, hole-boring and relativistic induced transparency processes and ion acceleration.

The folder which contains the data files is organised as follows. The numerical simulation files are classified by the initial parameters used in the simulation, which include the peak laser intensity, the target thickness and the inclusion (or not) of the radiation reaction force. The data for the kinetic energy of the ions and electrons as a function of time is in the file named "energy.dat". Column 1 is the time and columns 4 and 5 are the numbers of ions and electrons, respectively. The data for the radiated photon energy as a function of time is in the file "Eray.dat". Column 1 is the time and column 3 is the radiated energy. The data for the maximum energy of ions is in the file named "deuteron-spectrum.dat" for deuterons and "proton-spectrum.dat" for protons.

This dataset relates to the EPSRC funded project Advanced laser-ion acceleration strategies towards next generation healthcare (EP/K022415/1), the EPSRC funded research fellowship Multi-PetaWatt laser-Plasma Interactions: A New Frontier in Physics (EP/J003832/1) and the UK Plasma HEC Consortium (EP/L000237/1).