Hydrodynamic simulation of HEDP Experiment

Osaka University, Institute of Laser Engineering, Chang LIU

目的　The purpose is using the FLASH code to simulate the High Energy Density Physics (HEDP) experiment which performed on Gekko XII facility. Several important plasma parameters can be calculated by the code.

内容　We use the FLASH code to simulate the experiment. Six laser beams illuminate a low density (1mg/cc) foam filled Polyimide cylinder and turned the foam into plasma. An initial parallel seed magnetic field is compressed by the laser-produce plasma.

結果　According to the simulation result, at the maximum compression timing, we got $n_e=10^{22}$ and $T_e=100eV$ at the compression core. A 10kT B-field is also observed.

利用した計算機　　VCC
ノード時間　　8373時間
使用メモリ　　45GB
ベクトル化率　85%
並列化　　12並列