

Abstract Submitted
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Computational Study of Hydrodynamic Instability under the Strong Magnetic Field¹ HIDEO NAGATOMO, TAKASHI ASAHINA, Institute of Laser Engineering, Osaka University, ATSUSHI SUNAHARA, Institute for Laser Technology, TOMOYUKI JOHZAKI, Hiroshima University — Recent studies suggest that the magnetic field can improve the heating efficiency of Fast Ignition scheme, if high energy electrons are guided toward the compressed core plasma. However, the imposed magnetic field of which intensity is sub-Tesla may affect to the electron thermal conductivity. Our preliminary simulation result suggests that the hydrodynamic instability is seeded by the strong magnetic field. In order to investigate the mechanism of the seed of the hydrodynamic instability in early stage of laser driven acceleration, 2-D magnetic field transport which is coupled with radiation hydrodynamic is executed. The result shows the formation of the ablation surface is suffered by the magnetic field before the acceleration. In this presentation the result of the simulation and mechanism of the seed of the instability are shown in detail.

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