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Three-dimensional Core Plasma Dynamics in Cone-guided Implosion for Fast Ignition HIDEO NAGATOMO, TOMOYUKI JOHZAKI, ILE Osaka University, ATSUSHI SUNAHARA, ILT, HITOSHI SAKAGAMI, NIFS, KUNIOKI MIMA, GPI — We have been studied the formation of high-density and high-areal-density core plasma in cone-guided non-spherical implosion for Fast Ignition. These simulations were based on two-dimensional radiation hydrodynamic code, where the center of the implosion was always on the axis of the guiding cone. This assumption was ideal, and in reality, there must be a displacement due to the target fabrication error, and laser non-uniformity. Three-dimensional implosion simulation where all physics are included is very expensive and difficult. Therefore the dynamics of imploded core plasma using 3-D Eulerian hydrodynamic code where a 2-D rad-hydro simulation result is extrapolated with 3-D perturbation is investigated for preliminary study. In the result, dynamics of imploded core, formation of the high-density jet, and breakdown of the tip of the cone are simulated. The affection of the 3-D dynamics to the Fast Ignition will be discussed also.

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