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Simulation Studies on Fast Heating for FIREX-I project TOMOYUKI JOHZAKI, HIDEO NAGATOMO, ILE, Osaka University, HITOSHI SAKAGAMI, NIFS, TATSUFUMI NAKAMURA, ATSUSHI SUNAHARA, ILE, Osaka University, YASUYUKI NAKAO, Kyushu University, KUNIOKI MIMA, ILE, Osaka University — At the fast ignition integrated experiments for cone-guided CD targets with GekkoXII+PW laser systems [1], the efficient heating of imploded cores (∼800eV) was demonstrated. As the next step, FIREX (Fast Ignition Realization EXperiment) project [2] has been started. In the phase I (FIREX-I), a foam-cryogenic DT target is imploded by the GekkoXII laser operated with higher energy mode and the imploded core is heated by the 10kJ LFEX laser. The goal of FIREX-I is the core heating up to ion temperature of ∼5keV. From the previous experiments, the heating laser energy and the fuel material are different in FIREX-I. In the present study, on the basis of core heating simulations for imploded core plasmas, where the core heating is treated with a simple heating model and the Fokker-Planck transport model, we evaluate those effects and show the requirement for achieving 5keV heating.
[1] R. Kodama, et al., Nature 418, 933 (2002).
[2] K. Mima, Annual Progress Rep. 2001 (Institute of Laser Engineering, Osaka University, 2001) p.1.

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