Abstract Submitted for the DPP05 Meeting of The American Physical Society

Integrated Simulation for Core Heating of Fast Ignition Targets TOMOYUKI JOHZAKI, HIDEO NAGATOMO, Institute of Laser Engineering, Osaka University, HITOSHI SAKAGAMI, National Institute for Fusion Science, TATSUFUMI NAKAMURA, Institute of Laser Engineering, Osaka University, YA-SUYUKI NAKAO, Kyushu University, KUNIOKI MIMA, Institute of Laser Engineering, Osaka University — In the recent fast heating experiments with cone-guided targets at Osaka University, imploded cores were heated up to $\sim 800 \text{eV}$ with a high coupling efficiency. The mechanism of the effective heating, however, has not been clarified until now. To simulate the overall physics and identify the crucial physics in the fast heating, we developed a multidimensional integrated code system 'Fast Ignition Integrated Interconnecting code' (FI^3 code), which includes all important physics form the implosion to the core heating. The integrated simulations show that in the low density plasma between cone tip and compressed core, strong microinstabilities are induced by fast electron beam, which moderates the spectrum of fast electron entering the core. As the results, the core is effectively heated by the relatively low energy component of fast electrons. We will show the imploded core profiles of cone-guided targets and core heating properties. This work is supported by MEXT, the Grant-in-Aid for Creative Scientific Research (15GS0214).

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Date submitted: 24 Aug 2005

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