Abstract Submitted
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Nonlocal thermal conduction due to laser-generated nonthermal electrons under strong magnetic fields[1] TAKASHI ASAHINA, HIDEO NAGATOMO, Institute of Laser Engineering, Osaka University, ATSUSHI SUNAHARA, Institute for Laser Technology, TOMOYUKI JOHZAKI, Hiroshima University, MASAYASU HATA, Institute of Laser Engineering, Osaka University, YASUHIKO SENTOKU, University of Nevada at Reno — Strong magnetic field application has been considered to be an attractive method of electron beam guiding in fast ignition scheme after the successful generation of kilotesla-order magnetic field by means of intense laser[2]. However, such strong magnetic fields may violate the implosion symmetry due to anisotropic thermal conduction[3]. Although nonlocal thermal conduction is an implosion-driving process of critical importance, the effect of magnetic field is poorly known. In this study, nonlocal thermal conduction is investigated in the presence of external magnetic fields using 1D3V Particle-In-Cell simulation. It is found that nonthermal electrons are generated near the critical surface with the intense laser irradiation unlike the case without external magnetic field. Their effect on nonlocal thermal conduction is under discussion.

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[2]S. Fujioka, et al., **Sci. Rep.** 3, 1170
[3]H. Nagatomo, et al., **Nucl. Fusion** 55, 093028

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