

Abstract Submitted
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Simplification of the laser absorption process in the particle simulation for the laser-induced shockwave processing KOHEI SHIMAMURA, University of Tsukuba — To reduce the computational cost in the particle method for the numerical simulation of the laser plasma, we examined the simplification of the laser absorption process. Because the laser frequency is sufficiently larger than the collision frequency between the electron and heavy particles, we assumed that the electron obtained the constant value from the laser irradiation. First of all, the simplification of the laser absorption process was verified by the comparison of the EEDF and the laser-absorptivity with PIC-FDTD method. Secondary, the laser plasma induced by TEA CO₂ laser in Argon atmosphere was modeled using the 1D3V DSMC method with the simplification of the laser-absorption. As a result, the LSDW was observed with the typical electron and neutral density distribution.

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