Nonlocal Electron Transport in Laser Ablation ATSUSHI SUNA-
HARA, Institute for Laser Technology, KUNIOKI MIMA, Institute of Laser Engi-
neering Osaka Univ. — Electron transport plays an important role in laser-produced
plasmas, especially in laser fusion plasmas, there are some issues to be solved re-
lated to the electron transport. The flux-inhibition is an important process in the
1-D problem. Also, in the 2-D problem, the spatial relaxation of the perturbation
of the electron flux should be considered. These processes are closely related to
the nonlocal electron transport where electron velocity distribution function is not
Maxwellian. In order to simulate the nonlocal electron transport in the laser ablation
process, we have developed the 1D and 2D nonlocal electron transport simulation
codes based on the Fokker-Planck equations. We will compare results of the elec-
tron energy conduction calculated by the flux-limited Spitzer-Harm model and those
based on the Fokker-Planck simulation in the 1D and 2D condition for the typical
laser ablation condition.

Atsushi Sunahara
Institute for Laser Technology