

Collisional Transport Coefficients in Laser-Heated Plasmas

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The transport coefficients are computed in fully ionized plasmas, heated by an intense laser field, in the collisional limit for arbitrary values of the atomic number. For this the perturbed Fokker-Planck equation with respect to a state defined by a super-Maxwellian [1] is solved numerically using the finite difference scheme. The electron-electron and electron-ion collisions are modeled by the Landau operators. The projection operators [2] have been used to ensure the conservative properties of the collision operators. For practical uses, all the coefficients transport are fitted accurately. In the limit where the global state corresponds to the equilibrium (Maxwellian distribution function), the results of the literature are recovered.

References

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