

Abstract Submitted
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Plasma screening effect on atomic collisions in turbulent plasmas

YOUNG-DAE JUNG, MYOUNG-JAE LEE, Hanyang University — The plasma screening effect on the electron-ion collision is investigated in non-thermal turbulent plasmas. The second-order eikonal analysis and the effective interaction potential including the Lorentzian far-field term are employed to obtain the eikonal scattering phase shift and the eikonal collision cross section as functions of the diffusion coefficient, impact parameter, collision energy, Debye length and spectral index of the Lorentzian plasma. It is shown that the non-thermal effect suppresses the eikonal scattering phase shift. However, it enhances the eikonal collision cross section in astrophysical non-thermal turbulent plasmas. The effect of non-thermal turbulence on the eikonal atomic collision cross section is weakened with increasing collision energy.

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