

Abstract Submitted
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Renormalization shielding effect on the electron-impact ionization process in dense partially ionized plasmas YOUNG-DAE JUNG, Hanyang University — The influence of renormalization shielding on the electron-impact ionization process is investigated in dense partially ionized plasmas. The effective projectile-target interaction Hamiltonian and the semiclassical trajectory method are employed to obtain the transition amplitude as well as the ionization probability as functions of the impact parameter, the collision energy, and the renormalization parameter. It is found that the renormalization shielding effect suppresses the transition amplitude for the electron-impact ionization process in dense partially ionized plasmas. It is also found that the renormalization effect suppresses the differential ionization cross section in the peak impact parameter region. In addition, it is found that the influence of renormalization shielding on the ionization cross section decreases with an increase of the relative collision energy. The variations of the renormalization shielding effects on the electron-impact ionization cross section are also discussed.

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