

Abstract Submitted
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Free-free transitions in the presence of laser fields and Debye potential at very low incident electron energies ANAND BHATIA, NASA/Goddard Space Flight center — We study the free-free transition in $e\text{-He}^+$ system in the ground state and embedded in a Debye potential in the presence of an external laser field which is monochromatic, linearly polarized and homogeneous, at very low incident electron energies. The laser field is treated classically while the collision dynamics is treated quantum mechanically. The incident electron is considered to be dressed by the laser field in a nonperturbative manner by choosing Volkov wave function. The scattering function for the incident electron on the target is solved numerically by taking into account the effect of electron exchange. We calculate the laser-assisted differential and total cross sections for free-free transitions for absorption/emission of a single photon or no photon exchange. The cross sections for $e\text{-He}^+$ system are much larger than $e\text{-H}$ system. The results will be presented at the conference.

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