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Electron impact single ionization cross sections: A probe to understand collision dynamics of atoms, ions and molecules

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Electron impact single ionization cross sections: A probe to understand collision dynamics of atoms, ions and molecules

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The electron and positron impact ionization cross section data of atomic, ionic and molecular targets are important for understanding collision dynamics having application in the field of astrophysics, plasma chemistry, physics of stars and interstellar gases. The detailed information about this kind of collision processes are obtained from the cross sections.

We report the results of our recent work on calculation of electron impact ionization triple differential cross sections for atomic (Ar, Xe) [1, 2] and molecular (N_2, H_2O and CO_2) [3-5] targets. We also report the results of our recent work on calculation of electron impact ionization cross sections for Be and W atoms and their charged states [6-7].

The status of charged particle ionization processes from targets with introductory idea about the theoretical formalism involved will be reviewed and results for the electron impact ionization of various targets will be discussed.

References:

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