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Electron impact excitation of singly-charged metal atoms¹

LALITA SHARMA, ANDREY SURZHYKOV, Physikalisches Institut, University of Heidelberg, RAJESH SRIVASTAVA, Indian Institute of Technology Roorkee — Electron impact cross section data are needed for the understanding of energy balance in astrophysical objects, magnetically confined thermonuclear reactors and various laser plasmas. In this contribution, we report a systematic study for the electron impact excitation of singly-charged metal atoms using fully relativistic distorted wave (RDW) theory. We calculate both differential and integrated cross sections as well as polarization parameters for optical transitions. These results are obtained for Mg II, Ca II, Zn II, Cd II and Ba II ions and compared with existing experimental and theoretical results.

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