

Abstract Submitted
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Electron impact excitation of Al X KANTI AGGARWAL, FRANCIS KEENAN, Queen's University Belfast — Emission lines of Al ions, including Al X, are important for the modeling and diagnostics of lasing, fusion and astrophysical plasmas, for which atomic data are required for a variety of parameters, such as energy levels, radiative rates (A - values), and excitation rates or equivalently the effective collision strengths (Υ), which are obtained from the electron impact collision strengths (Ω). Experimentally, energy levels are available for Al X on the NIST website, but there is paucity for accurate collisional atomic data. Therefore, here we report a complete set of results (namely energy levels, radiative rates, and effective collision strengths) for all transitions among the lowest 98 levels of Al X. These levels belong to the $(1s^2) 2s^2, 2s2p, 2p^2, 2s3\ell, 2p3\ell, 2s4\ell,$ and $2p4\ell$ configurations. Finally, we also report the A - values for four types of transitions, namely electric dipole (E1), electric quadrupole (E2), magnetic dipole (M1), and magnetic quadrupole (M2), because these are also required for plasma modeling. For our calculations of wavefunctions, we have adopted the fully relativistic GRASP code, and for the calculations of Ω , the Dirac atomic R-matrix code (DARC) of PH Norrington and IP Grant. Additionally, parallel ca

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