Effective collision strengths for the electron impact excitation of Mg v[1] C.E. HUDSON, C.A. RAMSBOTTOM, P.H. NORRINGTON, M.P. SCOTT, School of Maths and Physics, Queen's University Belfast, UK — Electron impact excitation collision strengths for fine structure transitions of Mg v have been determined by a Breit-Pauli R-matrix calculation. The target states are represented by configuration interaction wavefunctions and consist of the 19 lowest LS states, having configurations $2s^2 2p^4$, $2s2p^5$, $2p^6$, $2s^2 2p^3 3s$ and $2s^2 2p^3 3p$. These target states give rise to 37 fine structure levels and 666 possible transitions. The effective collision strengths are calculated by averaging the electron collision strengths over a Maxwellian distribution of electron velocities. Effective collision strengths for transitions between the fine structure levels are given for electron temperatures in the range $\log_{10} T_e(\text{K}) = 3.0 - 7.0$. Results are compared with the previous R-matrix calculation of Butler & Zeippen (AASS, 1994) and the recent Distorted Wave evaluations of Bhatia, Landi & Eissner (ADNDT, 2006).

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