

Abstract Submitted
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Resonance and intersystem lines of astrophysical importance in neutral Sulphur NARAYAN C. DEB, ALAN HIBBERT, Queen's University Belfast — We report extensive configuration interaction calculations of S I, for fine structure levels belonging to the configurations $3s^23p^4$, $3s3p^5$, $3s^23p^3(^4S^o, ^2D^o, ^2P^o)nl$, with $n\ell=4s, 5s, 6s, 4p, 5p, 6p, 3d, 4d, 4f, 5f, 5g$. Correlation effects are added using additional s, p, d orbitals. For most levels, there is good agreement between our *ab initio* energies and the tabulations of NIST. Oscillator strengths have been calculated for all possible transitions between these levels, after refinements to both energy levels and CI mixing coefficients introduced by means of our 'fine-tuning' process. Our results show significant improvement over previous calculations.

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