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Near-Threshold Dielectronic Recombination Studies of Si-Like Ions JAGJIT KAUR, THOMAS GORCZYCA, Western Michigan University, NIGEL BADNELL, University of Strathclyde — We present results of dielectronic recombination (DR) calculations for the Si-like isoelectronic sequence and the important S^{2+} case in particular. A perturbative, multi-configuration approach is used, and uncertainties in the energy positions of low-lying resonances are investigated. Multi-configuration Hartree-Fock calculations are also performed for energy positions of near-threshold bound and resonance states. This work is motivated by the astrophysical importance of the S^{2+} DR rate in determining the sulfur ionization balance in the Orion nebula, a photoionized plasma corresponding to low-energy electrons. The computed DR rate coefficients comprise part of the assembly of the DR data base required in the modeling of dynamic finite density plasmas.

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