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Final-state-resolved charge exchange in O^{7+} + H collisions[1] J. NOLTE, P.C. STANCIL, University of Georgia, A. WATANABE, Ochanomizu University — Charge transfer between the solar wind ion O^{7+} and neutral interstellar hydrogen is thought to be a significant contributor to the heliospheric component of the soft x- ray background, as the resultant highly excited O^{6+} ion emits an x-ray photon in the electron's cascade to the ground state. Models of the heliospheric x-ray emission thus require accurate cross section data for this particular collision system. Experimental studies of this system, however, are rare and suffer from limited energy resolution and tend to focus on only the total cross section. In this study, we perform fully quantum calculations for the scattering system over a range of collision energies from 10 eV/u to 50 keV/u for all important n, l, and S-resolved states. In particular, we focus on the distribution of electron capture into the n=4, 5, and 6 manifolds, for both singlet and triplet states.

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