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Relativistic atomic data for Cu-like tungsten[1] U.I. SAFRONOVA, A.S. SAFRONOVA, University of Nevada, Reno, P. BEIERSDORFER, Lawrence Livermore National Lab. — Energy levels, radiative transition probabilities, and autoionization rates for [Ne]$3s^2 3p^6 3d^9 4l'nl$, [Ne]$3s^2 3p^5 3d^{10} 4l'nl$ (n=4-6), and [Ne]$3s^2 3p^6 3d^9 5l'nl$,(n=5-7) states in Cu-like tungsten (W^{45+}) are calculated using the relativistic many-body perturbation theory method (RMBPT code), the multiconfiguration relativistic Hebrew University Lawrence Livermore Atomic Code (HULLAC code), and the Hartree-Fock-relativistic method (COWAN code). Branching ratios relative to the first threshold and intensity factors are calculated for satellite lines, and dielectronic recombination (DR) rate coefficients are determined for the singly excited, as well as doubly excited non-autoionizing states in Cu-like W^{45+} ion. Contributions from the autoionizing doubly excited states (with n up to 500), which are particulary important for calculating total DR rates, are estimated. Synthetic dielectronic satellite spectra from Cu-like W are simulated in a broad spectral range from 3 to 70 Å. These calculations provide highly accurate values for a number of W^{45+} properties useful for a variety of applications including for fusion applications.

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