Radiative Recombination in ultracold plasmas\textsuperscript{1} GOUTHAMAN BALARAMAN, RAYMOND FLANNERY, Georgia Institute of Technology — A symmetrized version of the Heisenberg correspondence principle is proposed and is used to derive “classical” radial matrix elements for continuum-bound transitions. Classical cross sections for radiative recombination at low energies into a particular \( n, \ell \) state are then derived and shown to be in excellent agreement with the quantal results. Classical cross sections also provide excellent agreement with the Kramers formula. Semi-classical transition probabilities for radiative cascade out of low \( \ell \) Rydberg states have been derived. Results for radiative recombination into and radiative transitions out of various \( n, \ell \text{states} \) are illustrated.

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