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Radiative Recombination in ultracold plasmas[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, ℓ 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 l Rydberg states have been derived. Results for radiative recombination into and radiative transitions out of various $n, \ell states$ are illustrated.

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