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Dielectronic Recombination From a Continuum of Finite Bandwidth Above the Classical Ionization Limit¹ EDWARD SHUMAN, TOM GALLAGHER, University of Virginia — Dielectronic recombination (DR) is the recombination of an energetic electron and an ion via autoionizing Rydberg states lying below an excited state of the ion. In the presence of a 38.7 GHz microwave field, we observe DR from a continuum of finite bandwidth at energies above as well as below the Ba⁺ $6p_{1/2}$ limit. The observed DR signal exhibits periodic structure with an energy spacing equal to the microwave frequency. The periodic structure is observed above and below the limit and is due to the absorption or stimulated emission of microwaves during recombination, i.e. DR occurs via the $6p_{1/2}n\ell$ Rydberg series dressed by the microwave field.

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