

Abstract Submitted
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Magnetic field enhancement of dielectronic recombination¹ EDWARD SHUMAN, WEI YANG, TOM GALLAGHER, University of Virginia — We report the results of the effects of combined electric and magnetic fields on dielectronic recombination (DR) from a continuum of finite bandwidth. Specifically, we have examined the process $\text{Ba } 6p_{3/2}8g \rightarrow \text{Ba } 6p_{1/2}nk \rightarrow \text{Ba } 6s_{1/2}nk + h\nu$ in the presence of electric fields from 0-7 V/cm and magnetic fields from 0-250 G. Our observations elucidate the requirements for magnetic field enhancement of the DR rate. In particular, they demonstrate that the magnetic coupling must not only be comparable to the electric field splitting of the intermediate autoionizing Rydberg states, but also to their decay rates.

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