

Abstract Submitted
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Modeling Stark Effect on Rydberg States of Argon to Support Laser-Induced Fluorescence Spectroscopy¹ CHRISTOPHER DUROT, JOHN FOSTER, Univ of Michigan - Ann Arbor — Sensitive spectroscopic measurements of electric field are possible based on the stark effect of Rydberg states. The analysis of spectra can be complicated by splitting of many line components that are nearly degenerate without the perturbation of an electric field and by many other transitions nearby. Modeling Stark splitting would help to select level schemes that are convenient for measurements and help in interpreting experimental spectra. We are implementing a Stark effect model for noble gas Rydberg states using jK coupling and hydrogenic wavefunctions. We apply the model first to a level scheme from literature to validate our implementation and second to different transitions to predict spectra and develop a clearer plan for the level scheme of the LIF-dip diagnostic we are also developing.

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