Photoionization microscopy in terms of local frame transformation theory[1] P. GIANNAKEAS, F. ROBICHEAUX, C.H. GREENE, Department of Physics and Astronomy, Purdue University, West Lafayette, Indiana 47907, USA — Two-photon ionization of an alkali-metal atom in the presence of a uniform electric field is investigated using a standardized form of the local frame transformation and generalized quantum defect theory. The relevant long-range quantum defect parameters in the combined Coulombic plus Stark potential are calculated with eigenchannel R-matrix theory applied in the downstream parabolic coordinate η. The present formulation permits us to express the corresponding microscopy observables through the local frame transformation, and it gives a critical test of the accuracy of the Harmin-Fano theory.

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