

Abstract Submitted
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Carbon K-shell molecular frame photoelectron angular distribution of neutral acetylene and the result of effective substitution of hydrogen by fluorine¹ SAMANTHA FONSECA, ANN OREL, UCDavis, THOMAS RESCIGNO, Lawrence Berkeley National Laboratory — Detection of a diffracted photoelectron in the molecular fixed body frame is a promising chemical reaction imaging technique. We use the complex Kohn variational method to calculate molecular frame photoelectron distributions (MFPADs) for carbon 1s core ionization of neutral acetylene. We then substitute hydrogen for fluorine, breaking the *gerade*, *ungerade* symmetry and compare these MFPADs to the acetylene results. In addition, we consider the results of ionizing the fluorine 1s instead of the carbon.

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