Abstract Submitted
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Ultrafast photo-dissociation imaged with femtosecond gas electron diffraction[1] KYLE WILKIN, Univ of Nebraska - Lincoln, JIE YANG, RYAN COFFEE, JAMES CRYAN, SLAC National Laboratory, MARKUS GUEHR, Univ of Potsdam, KAREEM HEGAZY, RENKAI LI, MICHAEL MINITTI, SLAC National Laboratory, PEDRO NUNES, Univ of York, XIAOZHE SHEN, THOMAS WOLF, XIJIE WANG, SLAC National Laboratory, MARTIN CENTURION, Univ of Nebraska - Lincoln — We examine dynamics of single photon excitation in $C_2F_4I_2$ molecules in the gaseous state using Ultrafast Electron Diffraction (UED). The experiments were performed at SLAC National Laboratory using the MeV gun with sub-200 fs resolution. With UED we can observe dynamics of the molecule with sub-Angstrom resolution. This allows us to view the transient state C_2F_4I + I before the molecule fully dissociates to C_2F_4 + 2I. We report on any dynamics observed in the transient state. We also report on differences in the rise time of the dynamics when comparing sub-sections of diffraction patterns both parallel and orthogonal to the polarization of the pump laser.

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