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Investigation of the single ionization of molecular iodine using velocity map imaging[1] DALE SMITH, University of Connecticut, VINCENT TAGLIAMONTI, Stony Brook University, JAMES DRAGAN, GEORGE GIBSON, University of Connecticut — We study the strong-field single ionization of iodine using velocity map imaging and find several distinct dissociation pathways leading to $I_2 \rightarrow I^+ + I$. To identify the molecular orbital from which the electron is removed we measured the kinetic energy release of the dissociation pathways as a function of laser wavelength, intensity, and polarization. We find that the many of these channels are not consistent with ionization from the first three valence orbitals of I_2.

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