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Spectrally Resolved Transient Alignment of Molecular Iodine DOUG BROEGE, EMILY PETERSON, PHILIP BUCKSBAUM, FOCUS Center, University of Michigan — The visible absorption spectrum of molecular iodine vapor develops transient anisotropic features following excitation by an intense ultrafast infrared laser pulse. We have studied the time evolution of this aniostotropic absorption for the first time. The transmission of polarized ultrafast continuum radiation through a thin (3mm) column of iodine vapor was measured following excitation of the vapor by an intense 800 nm sub-picosecond laser pulse. The results show the interplay between several multiphoton processes such as impulsive rotational and vibrational excitation, multiphoton absorption, dissociation, and ionization.

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