Abstract Submitted
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Enhanced ionization of an inner orbital of I_2 by strong laser fields[1] GEORGE GIBSON, HUI CHEN, VINCENT TAGLIAMONTI, University of Connecticut — Using pump-probe spectroscopy, strong-field enhanced-ionization is found in an inner orbital of I_2. A wavepacket is launched in the B state of I_2, whose valence orbitals are $\sigma_g^2\pi_u^4\pi_g^3\sigma_u^1$, and singly ionized to the I + I^+ dissociation channel. The ionization signal peaks at two different internuclear separations: 7.3 and 8.7 a.u. The latter shows enhanced ionization of the σ_u state, which has been studied before with the I_2^+ signal. However, the peak at smaller R corresponds to enhanced ionization of the σ_g state. The peak at 8.7 a.u. in the dissociating channel reveals that there could be strong mixing of different molecular orbitals when the two iodine atoms are pulled apart.

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