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Influence of initial angular distribution on strong-field molecular dissociation[1] YOULIANG YU, SHUO ZENG, YUJUN WANG, BRETT ESRY, J. R. Macdonald Laboratory, Kansas State University, Manhattan, Kansas, 66506 — Although there is considerable effort to obtain the dependence of molecular ionization on the nuclear geometry, there have been essentially no studies examining the dependence of dissociation on the nuclear geometry. One would expect, however, that dissociation would also be rather sensitive to the initial disposition of the nuclei. Of the studies that do exist, the vast majority are for reduced-dimensional models and are thus generally of little value in quantitatively predicting what might be seen experimentally. To rectify this situation, we will present full-dimensional numerical solutions of the time-dependent Schrödinger equation for strong-field dissociation of H_2^+ at intensities where ionization can be neglected. We will examine the dependence of the final momentum distribution and other observables on various initial angular distributions in few-cycle pulses.

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