Abstract Submitted
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Fragmentation dynamics of $\text{Ar}_2^+$ dimers in intense laser fields$^1$ M. MAGRAKVELIDZE, Department of Physics, Kansas State University, J. WU, R. DÖRNER, Institut für Kernphysik, Goethe Universität, U. THUMM, Department of Physics, Kansas State University — We studied the fragmentation dynamics of the $\text{Ar}_2$ dimers in 790 nm pump and 1400 nm probe pulses with intensities of $10^{14}$ W/cm$^2$ by analyzing kinetic energy release (KER) spectra as a function of the pump probe delay. The KER spectra are measured by detecting Ar-ion fragments in a COLTRIMS [1] setup and are compared with model calculations based on the numerical propagations of the time-dependent Schrödinger equation [2]. The measured spectra are best reproduced by two-state calculations that include the adiabatic electronic states $I(1/2)_u$ and $II(1/2)_g$ of $\text{Ar}_2^+$, dipole coupled in the pump- and probe-laser electric fields.


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