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Tunable left-right asymmetry in the dissociation of D_2^+ in a two-color laser field FENG HE, DIPANWITA RAY, SANKAR DE, IGOR LITVINYUK, LEW COCKE, UWE THUMM — The coherent superposition of a linearly polarized intense IR laser pulse with its first harmonic generates a two-color pulse whose asymmetric shape is controlled by the adjustable delay τ between the two pulses. By numerically solving the time-dependent Schrödinger equation, we simulate the dissociation of D_2^+ in such pulses and analyze the left-right asymmetry in the electron-localization during the dissociation of the molecular ion as a function of τ and the kinetic energy of the fragments. Our theoretical results are compared with new experimental results from the J.R. Macdonald Laboratory at KSU.

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