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Carrier-envelope phase control over the branching ratios in strong-field dissociation of HD^{+}[1] BRANDON RIGSBEE, YUJUN WANG, BRETT ESRY, Kansas State University — We have theoretically explored the carrier-envelope phase (CEP) effect on the dissociation of HD^{+} with short, intense laser pulses. The branching ratios (BR) of the dissociating fragments are calculated for several laser wavelengths ranging from 800 nm to 4000 nm with two-cycle pulse durations. The CEP dependence of the BR is shown to be stronger with increasing wavelength. In addition, we explore the feasibility of CEP control over the BR with relatively long pulses by exploiting the dynamics of the nonadiabatic coupling which has a strong dependence on the internuclear distance and energy of the dissociating wave packet.

[1]J. R. Macdonald Laboratory, Department of Physics, Kansas State University, Manhattan, Kansas 66506, USA

Brandon Rigsbee
Kansas State University

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