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Comparison of strong-field dissociation dynamics in Li_2^+ and H_2^+ G.S.J. ARMSTRONG, B.D. ESRY, J. R. Macdonald Laboratory, Kansas State University, Manhattan, KS 66506, USA — Building on previous studies for H_2^+ , we investigate the dissociation dynamics of Li_2^+ in intense laser fields. As the simplest alkali dimer ion, Li_2^+ provides a natural prototype system for study after H_2^+ . Moreover, the more complex electronic structure of Li_2^+ allows numerous excited electronic states to play a role in the dynamics, marking a departure from the typical twostate approach used for H_2^+ . In this study, we solve the time-dependent Schrödinger equation in full dimensionality. We identify the dominant dissociation channels over a range of laser parameters, and compare how short-pulse carrier-envelope phase effects are manifest in each molecule.

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