PUMP-PROBE PHOTOIONIZATION AND MASS SPECTROSCOPY OF PENTAMETHYLCYCLOPENTADIENE

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The ultrafast radiationless decays in cyclic dienes normally proceed through conical intersections of potential energy surfaces. Time-resolved experiments on pentamethylcyclopentadiene were performed by exciting the first excited state with femtosecond pulses at 267 nm. Photoionization with a time-delayed probe pulse yields delay-time dependent mass and photoelectron spectra that reveal the ultrafast character of the curve crossing dynamics.