PHOTODISSOCIATION STUDIES OF RADICALS: EXPERIMENT

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The photodissociation of hydrocarbon radicals, C3H5 and C2H5 in particular, is studied by detection of the product hydrogen atom. Action spectra map out the dissociating state. Kinetic energy release as well as the risetime of the atomic hydrogen signal provide dynamical information. The measured dynamics of C3H5, initially excited to either the A-state or the C-state, are completely mapped and compare well to predictions of statistical rate theory. The C2H5 dissociation dynamics, however, show a marked deviation from RRKM predictions.