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Nonadiabatic dynamics in dissociative electron attachment to formic acid[1] DANIEL SLAUGHTER, THORSTEN WEBER, ALI BELKACEM, ROBERT LUCCHESE, Lawrence Berkeley National Laboratory, CYNTHIA TREVISAN, California Maritime Academy, C. WILLIAM MCCURDY, Lawrence Berkeley National Laboratory, and University of California, Davis, THOMAS RESCIGNO, Lawrence Berkeley National Laboratory — We present recent results on the dynamics of dissociative electron attachment to formic acid by anion fragment momentum imaging experiments and ab initio electron scattering theory. Anion yield measurements and electronic structure calculations reveal at least two Feshbach (doubly-excited) anion resonances between 6 and 9 eV incident electron energy. We investigate the dynamics of site-selective hydride loss for each resonance. At lower incident energies, two-body dissociation occurs by C-H or O-H break, while at higher incident energies the only significant dissociation channel involves O-H break. Structures in the H- momentum distributions illuminate the presence of two or more electronic states of the HCOO radical, which suggest the presence of a conical intersection between two metastable anion potential energy surfaces.

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