

## INFLUENCING THE PHOTODISSOCIATION DYNAMICS OF PHENOL

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Photoinduced hydrogen elimination reactions in phenol-d<sub>5</sub> have been studied by use of velocity map ion imaging. Examination of phenol dissociation along the OH stretching coordinate shows that the S<sub>2</sub> state, which is optically dark, cuts through the S<sub>0</sub> state and the S<sub>1</sub> state, which is the dominant state by which absorption from the ground state occurs. In multiple dimensions, these crossings become conical intersections. Comparing total kinetic energy release distributions of H-atom fragments from both one-photon dissociation and vibrationally mediated photodissociation of phenol-d<sub>5</sub> reveals that initial vibrational excitation influences the dissociation dynamics. We have looked at the effect of an internal influence (OH stretch) on the dissociating system; it would be interesting to look at the effect of an external perturbation on the dissociating molecule, perhaps through use of a mixed dimer.