VIBRATIONALLY MEDIATED BIMOLECULAR REACTIONS

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In our lab we have been studying the reactivity of vibrationally excited CH_3D with Cl. Our most recent study has been on the CH stretch and CD stretch combination region consisting of the $\nu_1 + \nu_2$, $\nu_4 + \nu_2$, and $2\nu_5 + \nu_2$ states. Through our methods of action spectroscopy and studying product distributions, we have learned about the relative reactivity of many different states. While some of the states have had fitting constants assigned before, we have assigned rotational constants to the $\nu_2 + \nu_4$ mode. We would also like to attempt some deconvolution to determine independent reactivity of these various modes. Further experiments will discover more systems able to provide further insights to vibrationally mediated reactivity, and any new results will be presented.