BIMOLECULAR REACTIONS OF A DIFFERENT COLOR: CH_3D + CHLORINE WITH VARIED PHOTOLYSIS WAVELENGTHS

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We examine the effect varying the collision energy has on the bimolecular reaction of CH_3D and chlorine. A Raman shifting cell pumped at 355 nm and filled with either hygrogen or methane gas provides, in discrete steps, light to photolyze Cl_2. This imparts bewteen 600 and 2000 cm^{-1} of collision energy to our system. By also adding C-H vibrational overtone excitation, around 6000 cm^{-1}, we can compare to previous, fixed-photolysis energy studies from our reseach group. We seek to elucidate the role translational energy (collision energy) plays in this reactive system.