VIBRATIONALLY MEDIATED PHOTODISSOCIATION OF HCN

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The vibrationally mediated photodissociation of HCN is being reexamined. HCN is excited to selected rotational levels of $4\nu_3$ (with $\nu_3 \approx$ CH stretching mode). This vibrationally excited state is then photodissociated to H + CN($A^2\Pi$) with UV radiation at 218 nm. The state distribution of the CN product is probed by Laser Induced Fluorescence using excitation in the A–B system. Improvements in the apparatus now allow studies at sufficiently reduced pressure that the nascent CN product state distribution can be probed. This distribution provides insight into the forces on the CN as the molecule undergoes dissociation on what is believed to be a repulsive $^1\Pi$ molecular state.