INFRARED-ULTRAVIOLET DOULBE RESONANCE SPECTROSCOPY OF NO AND NO CONTAINING COMPLEXES

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Non-resonant two-photon absorption spectroscopy has been successfully applied to study high lying electronic states of small molecules. In favorable cases, it can even be used for product detection in molecular dynamics studies. Also, van der Waals complexes have been studied recently through resonance enhanced multiphoton ionization (REMPI) spectroscopy. In this contribution, we present first results of molecular beam experiments where we use $(2+1)$ REMPI to detect the infrared absorption of NO and NO containing complexes. The output of a single mode optical parametric oscillator (OPO) laser is used to excite the first overtone of the NO two-photon chromophore near $2.7\mu m$. Resonances are detected through the depletion of the REMPI signal or, alternatively, through the detection of vibrationally excited species.