REMPI SPECTROSCOPY OF NITRIC OXIDE/METHANE ISOTOPOMERS ($NO.CH_XD_{4-X}$, X = 0-4)

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The A←X transition of $NO.CH_xD_{4-x}$ (x = 0 - 4) van der Waals complexes were studied via (1+1) resonance enhanced multiphoton ionization (REMPI) spectroscopy. The effects of isotopic substitution on the structure of the first band, on the complexes' dissociation energies, and on the vibrational constants were measured. Spectra for each complex were measured in several mass channels, corresponding not only to the parent ions, but also to the dissociation products ($CH_xD_{4-x}^+$), and to fragments formed via single and multiple hydrogen/deuterium losses.