HENDI SPECTROSCOPY OF C-H STRETCHING MODES OF METHANE AND SUBSTITUTED METHANE MOLECULES

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We report the first results with a new Helium Nanodroplet Isolation Spectroscopy machine at UVa. The excitation source is an ARGOS cw PPLN OPO (Aculight). which produces $\sim$2 W in the 3.2-3.9 μm spectral window. We are extending the spectroscopy of methane in helium, having observed weak, Fermi Resonance induced ro-vibrational transitions of CH_4 and the C-H fundamentals of CH_3D, CH_2D_2, and CHD_3. We have also observed the spectrum of CH_3Cl and plan to report on other substituted methane molecules at the conference.