HIGH RESOLUTION OVERTONE SPECTROSCOPY OF ACETYLENE VAN DER WAALS COMPLEXES

K. DIDRICHE, C. LAUZIN, T. FOLDES, X. DE GHELLINCK, M. HERMAN, *Service de Chimie quantique et Photophysique CP160/09, Faculté des Sciences, Université Libre de Bruxelles (U.L.B.), Av. Roosevelt, 50, B-1050, Bruxelles, Belgium.*

The latest upgrades and results from the FANTASIO+ set-up[a] (for 'Fourier trANsform, Tunable, diode and quadrupole mAss spectrometers interfaced to a Supersonic expansIOn') are presented. Thanks to the improvements of the calibration (better than $\pm 1 \times 10^{-3}$ cm^{-1} accuracy) and the ring-down time (130 μs), the spectrum of C_2H_2-N_2 around 6500 cm^{-1} was recorded as well as absorption bands due to combined excitations of intra and intermolecular modes of C_2H_2-Ar, C_2H_2-CO_2 and C_2H_2-N_2O. A hot absorption band of the van der Waals complex C_2H_2-Ar was also observed. The first analyses of these spectra will be presented.

Along the development of the FANTASIO+ set-up, a new injection system to probe samples liquid at STP conditions, and a pulse injector are currently under implementation. Those upgrades will allow the study of organic and prebiotic molecules and a better cooling of the gas in the expansion, respectively. The first results will also be presented.

[a] Didriche *et al.*, *Mol. Phys.* 2010, **108**, 2158-2164