GLOBAL MODELING OF HIGH RESOLUTION IR SPECTRA OF $^{12}C_2H_2$

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A global approach has been developed to calculate vibration-rotation spectra of acetylene in its ground electronic state [a], now including Coriolis interaction [b]. The acetylene spectroscopic data base has been recently extended and the most recent set of effective Hamiltonian parameters resulting from the fit of experimental line positions gathered from literature up to 9000 cm^{-1} will be presented.
This global model is essential to perform assignments and intensity simulations of high resolution spectra of acetylene, of astrophysical interest. Recent results will be highlighted concerning the FIR, MIR and NIR ranges.

[a] M. Herman, Mol. Phys. 105, 2217 (2007).
[b] B. Amyay, S. Robert, M. Herman, A. Fayt, B. Raghavendra, A. Moudens, J. Thiévin, B. Rowe, and R. Georges, J. Chem. Phys. 131, 114301 (2009).