

THE MILLIMETER-WAVE SPECTRUM OF VINYL ACETATE

LUCIE KOLESNIKOVÁ, ISABEL PEÑA, JOSÉ L. ALONSO, *Grupo de Espectroscopia Molecular, Lab. de Espectroscopia y Bioespectroscopia, Unidad Asociada CSIC, Universidad de Valladolid, Valladolid, Spain*; JOSE CERNICHARO, *Departamento de Astrofísica, Centro de Astrobiología CAB, CSIC-INTA, Madrid, Spain*; ISABELLE KLEINER, *CNRS et Universités Paris Est et Paris Diderot, Laboratoire Interuniversitaire des Systèmes Atmosphériques (LISA), Créteil, France*.

Recent discovery of methyl acetate in Orion KL^a places the vinyl acetate as a potential candidate possibly present in the interstellar medium. The room-temperature rotational spectrum of vinyl acetate has been measured from 125 up to 360 GHz to provide direct frequencies to the astronomical community. Transition lines, corresponding to the most stable conformer, have been observed and assigned on the basis of the previously determined spectroscopic constants.^b All the rotational transitions reveal the $A - E$ splitting due to the methyl internal rotation and the precise set of the spectroscopic constants obtained from the least-squares fit to a threefold barrier internal rotation Hamiltonian is reported. Additional measurements have been also made using a broadband CP-FTMW spectrometer in the region of 6–18 GHz which made possible to assign all monosubstituted ¹³C and ¹⁸O isotopic species in natural abundance and to derive the molecular structure.

^aB. Tercero, I. Kleiner, J. Cernicharo, H. V. L. Nguyen, A. López, and G. M. Muñoz Caro, *Astrophys. J. Lett.* **2013**, 770, 13.

^bB. Velino, A. Maris, S. Melandri, W. Caminati, *J. Mol. Spectrosc.* **2009**, 256, 228.