

C6H

F: C6H

P: 3 131:278374                      Electronic    Ground    and    Excited  
State Spectroscopy of C6H and C6                      Linnartz, H.:  
Motylewski, T.; Vaizert, O.; Maier, J. P.; Apponi, A.  
J.; McCarthy, M. C.; Gottlieb, C. A.; Thaddeus, P.  
                    Institute for Physical Chemistry, University of  
Basel    Basel CH 4056, Switz. J.                      Mol.                      Spectrosc.,  
197(1), 1-11 (English) 1999                      Rotational transitions in  
the X2.P1. ground state of C6H and C6D were measured by  
Fourier    transform    microwave    and    millimeter-wave  
absorption spectroscopy.    More than 150 rotational lines

in the ground  $2\Pi_{3/2}$  and  $2\Pi_{1/2}$  ladders were obsd., allowing an accurate detn. of the rotational structure, lambda-doubling, and hyperfine coupling const. using a std. effective Hamiltonian for a mol. in an isolated  $2\Pi$  electronic state. mol. ground state const. were used to characterize the rotationally reso origin band of the  $2\Pi$   $\rightarrow$   $2\Pi$  electronic transition obsd. by cavity rin laser absorption spectroscopy in a pulsed supersonic slit-jet discharge s Spectroscopic const. for the excited electronic state are detd.



F: C6H

P: 3

131:234949      Hyperfine structure of the C5H, C6H,  
and C8H radicals.      McCarthy, M. C.; Chen, W.;  
Apponi, A. J.; Gottlieb, C. A.; Thaddeus, P.  
Harvard-Smithsonian Center for Astrophysics  
Cambridge, MA 02138, USA      Astrophys. J.,  
520(1, Pt. 1), 158-161 (English) 1999

Hyperfine structure in the rotational transitions of the C5H, C6H, and C8H C chain radicals was measured with a Fourier transform microwave spectrometer. Enough transitions (4 to 6) between 7 and 22 GHz were meas for each radical to det. the H hyperfine coupling const. to high precisi The radio spectrum of each radical can now be calcd. to better than 0.30 in equiv. radial velocity at frequencies <50 GHz, adequate for radio astronomical studies in very narrow line sources like TMC-1.

1333

1999

F: C6H+

P: 3

132:85360            Rotationally        resolved        electronic  
absorption spectra of triacetylene cation in a  
supersonic jet.        Pfluger,        David;        Sinclair,  
Wayne E.; Linnartz, Harold; Maier, John P.

Institute for Physical Chemistry, University  
of Basel            Basel CH-4056, Switz. Chem.        Phys.  
Lett., 313(1,2), 171-178 (English) 1999        The  
rotationally resolved cold spectra (Trot .apprxeq. 17  
K) of the A2.PI.g .ltwarw. X2.PI.u 000 and 401

C.A. 2000, 132

transitions of triacetylene cation were recorded in a supersonic jet. A discharge modulation in combination with the external frequency modulation of a continuous-wave ring laser is used to enhance detection sensitivity. The advantage of obtaining the spectra of such species under jet conditions is shown by comparison with measurements in a cell of the 401 vibronic transition. The combined analyses of the rotational structure yields rotational and spin-orbit consts. for the  $\nu_4 = 1$  level of the  $A_2\Pi_g$  state.

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