

VIBRATIONAL SPECTROSCOPIC DATABASE ON ACETYLENE  $\tilde{X}^1\Sigma_g^+$  ( $^{12}\text{C}_2\text{H}_2$ ,  $^{12}\text{C}_2\text{D}_2$ ,  $^{13}\text{C}_2\text{H}_2$ )

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We have gathered information on the vibrational energy states in the ground electronic state of three isotopomers of acetylene ( $^{12}\text{C}_2\text{H}_2$ ,  $^{12}\text{C}_2\text{D}_2$ ,  $^{13}\text{C}_2\text{H}_2$ ): spectroscopic constants (vibrational frequencies and anharmonicities, geometrical structure, vibration-rotation interaction parameters), observed vibrational energy states and complete sets of predicted vibrational energies and predicted principal rotational constants  $B_v$  for states of  $^{12}\text{C}_2\text{H}_2$ ,  $^{12}\text{C}_2\text{D}_2$  and  $^{13}\text{C}_2\text{H}_2$  up to 15000, 10000 and 12000  $\text{cm}^{-1}$  respectively. Statistical parameters (partition functions and integrated number of states) deduced from these predicted spectroscopic data are also provided for the three isotopomers.