

The Submillimeter-wave Spectrum of the Formaldehyde Isotopomer $\text{H}_2\text{C}^{18}\text{O}$ in its Ground Vibrational State

Holger S. P. Müller, Ralf Gendriesch, Frank Lewen, and Gisbert Winnewisser

I. Physikalisches Institut, Universität zu Köln, Zùlpicher Str. 77, D-50937 Köln

Reprint requests to Prof. G. W. or Dr. H. S. P. M.; Fax: +49 221 470 5162;

E-mail: winnewisser@ph1.uni-koeln.de or hspm@zeus.ph1.uni-koeln.de

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The ground state rotational spectrum of $\text{H}_2\text{C}^{18}\text{O}$ has been studied between 485 and 835 GHz with a sample of natural isotopic composition. Additional lines have been recorded around 130 GHz and near 1.85 THz, using a recently developed far-infrared laser-sideband spectrometer. The accurate new line frequencies were fit together with previously published data to obtain greatly improved spectroscopic constants. Both Watson's S and A reduced Hamiltonians have been employed yielding the rotational constants $A_S = 281\,961.215$ (82), $B_S = 36\,902.275\,51$ (36), $C_S = 32\,513.405\,89$ (36), $A_A = 281\,961.371$ (82), $B_A = 36\,904.173\,32$ (91), and $C_A = 32\,511.524\,65$ (86) MHz, respectively.

Key words: Rotational Spectroscopy; Interstellar Molecule; Astrophysics; Astrochemistry; Reduced Hamiltonian.