PRESSURE BROADENING AND SHIFT COEFFICIENTS FOR THE $22^0 1\text{-}00^0 0$ BAND OF $^{12}C^{16}O_2$ NEAR 6348 cm^{-1}

D. CHRIS BENNER, V MALATHY DEVI, *Department of Physics, The College of William and Mary, Williamsburg, VA 23187-8795*; LINDA R. BROWN, CHARLES E. MILLER and ROBERT A. TOTH, *Jet Propulsion Laboratory, California Institute of Technology, 4800 Oak Grove Dr., Pasadena, CA 91109-8099*.

Room temperature values of self- and air-broadening and pressure shift coefficients for the $22^0 1\text{-}00^0 0$ (30012-00001) combination band of $^{12}C^{16}O_2$ located near 6348 cm^{-1} were determined from analysis of high-resolution laboratory spectra. The results were obtained from analyzing eight self-broadened and twelve air-broadened spectra that were fit simultaneously with a multispectrum nonlinear least squares technique.[a] All data were obtained using a natural isotopic sample of CO_2 at a resolution of about 0.01 to 0.012 cm^{-1} with the McMath-Pierce FTS at the National Solar Observatory on Kitt Peak and a 6-m base path White cell. The path lengths varied between 24 and 121m and the sample pressures were in the 11 to 900 Torr range. Present results will be compared to values reported in the literature.[bcd]

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[a] D.C. Benner, C.P. Rinsland, V. Malathy Devi, M.A.H. Smith and D. Atkins, A multispectrum nonlinear least squares fitting technique, JQSRT, 53, 705-721 (1995).

[b] L.S. Rothman et al. The HITRAN 2004 Molecular Spectroscopic Database. JQSRT (in press)

[c] J. Henningsen and H. Simonsen, The ($22^0 1\text{-}00^0 0$) band of CO_2 at 6348 cm^{-1}: line strengths, broadening parameters and pressure shifts, J. Mol. Spectrosc. 203, 16-27 (2000).

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