

## TEMPERATURE-DEPENDENCE OF SELF- AND AIR-BROADENED CO LINE SHAPES IN THE FUNDAMENTAL BAND

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We present results of an extensive analysis of the CO 1←0 band in 40 spectra of pure carbon monoxide and carbon monoxide mixed with air recorded at temperatures ranging between 79 K and room temperature. All spectra were recorded using the 1-m McMath-Pierce Fourier Transform spectrometer located at Kitt Peak, AZ, USA and two temperature-controlled gas cells. The analysis was carried out using multispectrum fitting software<sup>a</sup> and the Voigt, speed-dependent Voigt and Rautian line shape models. When using the Rautian model, we employed calculated narrowing parameters obtained from computed diffusion constants<sup>b</sup> for each of the absorber-perturber pairs CO-CO, CO-N<sub>2</sub> and CO-O<sub>2</sub>. The experimentally retrieved temperature dependences of the line shape parameters are been compared with previous published results and with the results of calculations for CO-N<sub>2</sub>.

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<sup>b</sup>J. O. Hirschfelder, C. F. Curtiss and R. B. Bird, *Molecular theory of gases and liquids*, New York, Wiley and Sons, 1952.