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Experimental and Theoretical He-Broadened Line Parameters of Carbon Monoxide in the Fundamental Band

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We will discuss recent spectroscopic results for He-broadened transitions of carbon monoxide in the fundamental band, performed over a range of temperatures from 80 to 296 K. Experimentally, the spectral line parameters and their temperature dependencies were retrieved using a multispectrum analysis software and different line shape models (Voigt, speed dependent Voigt, Rautian, Rautian with speed dependence). In addition, we have performed theoretical calculations for He-broadened Lorentz half-width coefficients and He-pressure-shift coefficients for the same transitions. The line mixing coefficients were calculated using the exponential power gap and energy corrected sudden scaling laws. Our results were compared with published results.

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