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## Experimental results and calculations for carbon monoxide in the fundamental band

*Thursday 14 June 2018 14:30 (15 minutes)*

This presentation is a continuation of spectroscopic results presented last year. We have completed our investigation of 27 spectra of carbon monoxide and of carbon monoxide mixed with air recorded over a range of temperatures at the former Fourier transform spectrometer located at Kitt Peak, Arizona. The spectra were analyzed using the speed-dependent Voigt and speed dependent Rautian profiles with weak line mixing components. The speed dependence parameters were either fitted or, for weak transitions they were fixed to calculated values obtained for an effective molecular potential of fifth order. The fits performed using the speed dependent Rautian profile were performed using a calculated value for the narrowing parameter, the same value for all transitions. Semi-classical theoretical calculations for self- and nitrogen-broadened line widths were performed at the temperatures of spectra using published potential energy surfaces and a Tipping-Herman intermolecular potential. Our experimental results will be compared with the calculations results and earlier published results.

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