

Tolton, B.T., I. Kelman, and J.R. Drummond. 1996. "Measurements of Atmospheric Carbon Monoxide with a Length Modulated Radiometer". Presentation at the 30th CMOS (Canadian Meteorological and Oceanographic Society) Congress, 26-31 May 1996, Toronto, Canada.

Presentation abstract:

A ground-based remote sounding instrument to measure atmospheric carbon monoxide has been built and successfully operated at the University of Toronto. This is the first remote sounding instrument to utilise a new form of correlation radiometer known as a Length Modulated Radiometer. The operating principle of the LMR is the modulation of a static gas cell path length by means of an optically inert filler material. Measurements of atmospheric CO were made with the instrument in downtown Toronto and at the Centre for Atmospheric Research Experiments (CARE) near Egbert Ontario, in the fall of 1994. This paper will discuss these measurements, the improvements which have been made to the instrumentation since that time, and the methods by which the system can be calibrated and the data analysed. This instrument is being used as a validation system for the measurement methodology for the MOPITT instrument which will be launched on the EOS-AM1 satellite later in this decade. In the future it is hoped that the instrument can be developed into a semi-automatic system for the validation of the satellite-based MOPITT instrument.

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