

## 6.135 CO<sub>2</sub> variability and trends in Mexico.

Early Career Scientist

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Abstract:

Carbon dioxide has been rising since the Industrial Era to levels over 400 ppm in the last years. CO<sub>2</sub> is the most important greenhouse gas from anthropogenic sources, it has a long atmospheric lifetime which makes for its high background atmospheric concentration that shows relatively small spatial and temporal variations. To account for this variability, dense and continuous CO<sub>2</sub> observations are needed. Since 2014, CO<sub>2</sub> has been monitored in six stations from the University Network of Atmospheric Observatories RUOA ([www.ruoa.unam.mx](http://www.ruoa.unam.mx)) using commercial cavity ring-down spectrometers. Three of these stations are within protected natural areas and are considered remote sites, whereas the rest are located within urban areas. At two of these sites, Altzomoni (N19.18°, W 98.65, 3985 masl) and the UNAM campus in Mexico City (N 19.32°, W 99.17°W, 2260 masl), the total vertical column of this gas is determined from solar absorption infrared measurements made in the near-infrared (NIR) spectral region and compared to satellite observations. In this work we present and interpret the data collected at these stations and show the seasonal variability and trends of CO<sub>2</sub> in very distinct regions of the Mexican territory.