

6.191 Formaldehyde and ethane variability in central Mexico from ground-based FTIR measurements.

Early Career Scientist

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Abstract:

The variability of formaldehyde (HCHO) and ethane (C₂H₆), two important organic molecules relevant to atmospheric chemistry involving photochemical reactions and direct emissions from biomass burning and combustion processes, were studied in central Mexico. Three years of data from ground-based solar absorption infrared measurements acquired at two stations: South of Mexico City at the UNAM campus (N19.32°, W99.17°, 2260 m.a.s.l.) and at the high-altitude Altzomoni NDACC station (N19.18°, W98.65, 3985 masl) were used to retrieve total vertical columns of these gases.

Results will be presented with time-series of these gases at two sites with close proximity (<60 km) but a large altitude difference (>1700 m), which in conjunction improve our current understanding of their vertical distribution, lifetimes and transport processes. These results will help in the near future for comparison studies with other ground-based techniques (MAX-DOAS), satellite-based measurements (TROPOMI, TEMPO, etc) and for improving the information fed and outputs in the global chemistry transport models.