13th International Atmospheric Limb Workshop



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Type: Talk

Aerosols, Trends, and Recent Results for the Atmospheric Chemistry Experiment (ACE)

The Atmospheric Chemistry Experiment (ACE) is an ongoing satellite mission for remote sensing of the Earth' s atmosphere. It is comprised of a Fourier transform spectrometer (ACE-FTS) operating in the infrared with broad spectral coverage (750 –4400 cm-1) and high resolution (0.02 cm-1), a UV-Visible-NIR spectrophotometer (ACE-MAESTRO, Measurement of Aerosol Extinction in the Stratosphere and Troposphere Retrieved by Occultation) with wavelength coverage 280 –1030 nm and resolution 1 –2 nm, and a pair of imagers measuring at 525 and 1020 nm, respectively. Collecting solar occultation measurements since February 2004, ACE provides over 21 years' worth of atmospheric profiles for pressure, temperature, and the volume mixing ratios of more than 30 molecules, as well as volume mixing ratio profiles for more than 20 subsidiary isotopologues. Removing the contributions of gas phase molecules from ACE-FTS measurements yields infrared spectra for aerosols, providing valuable composition information for the aerosols. Trends derived from the long-term ACE measurement set will be described, along with recent results and retrievals for new molecules (C2H4 and HFC-125) developed in preparation for the next processing version.

Topic

Current and past limb and occultation instruments: algorithms, products, validation

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