ATMOSPHERIC ISOTOPOLOGUES OBSERVED WITH ACE-FTS AND MODELED WITH WACCM

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Atmospheric isotopologues are useful tracers of dynamics and chemistry and can be used to constrain budgets of gases in the atmosphere. The Atmospheric Chemistry Experiment (ACE) routinely measures vertical profiles of over 35 molecules and 20 isotopologues via solar occultation from a satellite in low Earth orbit. The primary instrument is an infrared Fourier transform spectrometer with a spectral range of 750 – 4400 $\mathrm{cm}^{-1}$and a resolution of 0.02 cm^{-1}. ACE began taking measurements in 2004 and is still active today. This talk focuses on isotopic measurements of CH_4, CO, CO_2, and N_2O from ACE-FTS. To complement ACE-FTS data, modeling using the Whole Atmosphere Community Climate Model (WACCM) was performed for each molecule.