



Retrieval of minor tropospheric constituents from the ACE-FTS instrument onboard the Scisat-1 satellite and applications

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Up to now, the vertically resolved distributions of oxygenated organic compounds have been inferred from surface and airborne measurements with very limited spatial and temporal coverage. This results in a poor understanding of the atmospheric budget of these compounds and of their impact on the mid to upper tropospheric chemistry. Scisat-1, also known as the Atmospheric Chemistry Experiment (ACE) is a Canadian-led satellite mission for remote sensing of the Earth's atmosphere. The primary instrument on board is a Fourier transform spectrometer (FTS) featuring broad spectral coverage in the infrared ($750\text{-}4400\text{ cm}^{-1}$) with a high spectral resolution (0.02 cm^{-1}). The FTS instrument measures down to 5 km altitude with a high signal-to-noise ratio using solar occultation. This gives the ability to measure seasonally and height-resolved distribution of minor tropospheric constituents on a near-global scale and provides the opportunity to evaluate our understanding of important atmospheric oxygenated organic species like formaldehyde and methanol. Retrieval characteristics will be presented for these two molecules as well as the implication for our knowledge of atmospheric chemistry of such measurements.