

The SPARC Data Initiative - ACE-FTS Climatology for the period of 2004-2010

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The Atmospheric Chemistry Experiment-Fourier Transform (ACE-FTS) aboard the Canadian satellite SCISAT (launched in August 2003) was designed to investigate the composition of the upper troposphere, stratosphere, and mesosphere. ACE-FTS utilizes solar occultation to measure temperature and pressure as well as vertical profiles of over thirty chemical species, including 17 species used in this project; O₃, H₂O, CH₄, N₂O, CO, NO, NO₂, N₂O₅, HNO₃, HCl, ClONO₂, CFC-11, CFC-12, HF, HCOH, HNO₄, and SF₆. Global coverage for each species is obtained approximately seasonally and with a vertical resolution of typically 3-4 km. A quality-controlled climatology has been created for each of these 17 species and a quality-controlled NO_y climatology has been derived using the nitrogen species measured by ACE-FTS. Climatological fields are produced by using individual profiles that are averaged over the period of 2004-2010. Measurements used are from the ACE-FTS version 2.2 data set including updates for O₃ and N₂O₅. These climatological products conform to the SPARC Data Initiative guidelines. The climatological fields are provided on a monthly basis at 5 degree latitude spacing and on 28 pressure surfaces. Here, we present a summary of the SPARC ACE-FTS climatology data product.