

VALIDATING LINE-OF-SIGHT WINDS CALCULATED FROM ACE-FTS SOLAR OCCULTATION MEASUREMENTS

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The Atmospheric Chemistry Experiment Fourier Transform Spectrometer (ACE-FTS) measures infrared transmittance spectra of the atmosphere from low Earth orbit using the Sun as a light source (solar occultation)^a. These spectra are used to derive altitude abundance profiles of more than 40 molecules, and properties of clouds and aerosols^b. The Doppler shifts on atmospheric lines can be used to determine line-of-sight winds^c. Line-of-sight winds are a new data product for version 5.0 of ACE-FTS processing. These winds are being validated through comparison with independent winds observations from meteor radars and from the ICON-MIGHTI satellite instrument.

^aBernath, P.F. The Atmospheric Chemistry Experiment (ACE). *J. Quant. Spectrosc. Radiat. Transf.* 2017, 186, 3–16.

^bLecours, M.J.; Bernath, P.F.; Sorensen, J.J.; Boone, C.D.; Johnson, R.M.; LaBelle, K. Atlas of ACE spectra of clouds and aerosols, *Journal of Quantitative Spectroscopy and Radiative Transfer*, Volume 292, 2022, 108361

^cBoone, C.D.; Steffen, J.; Crouse, J.; Bernath, P.F. Line-of-Sight Winds and Doppler Effect Smearing in ACE-FTS Solar Occultation Measurements. *Atmosphere* 2021, 12, 680.