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Type: **Talk**

A machine learning approach to retrieving stratospheric water vapor from OMPS LP measurements

Stratospheric water vapor (SWV) plays an important role in atmospheric chemistry and dynamics. The Aura Microwave Limb Sounder (MLS) instrument has provided a daily near-global record of SWV for around two decades. After the Aura mission ends later this year, SWV measurements will be mostly limited to occultation measurements by the Stratospheric Aerosol and Gas Experiment III (SAGE III) and Atmospheric Chemistry Experiment (ACE) instruments, which have significantly reduced geographical coverage. While not designed to measure SWV, the Ozone Mapping and Profile Suite Limb Profiler (OMPS LP) shows weak sensitivity to SWV, potentially enabling it to continue the MLS SWV record until a successor instrument is launched. We present our neural network approach to retrieving SWV from OMPS LP measurements and compare with MLS, SAGE, and ACE. We also discuss the challenges and limitations of our methodology.

Topic

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

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