

# Ozone Mini-Hole representation in Satellite Data and Reanalyses

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Tropospheric weather patterns often lead to strong variability on time scales of days in total ozone columns at mid-latitudes. These short term ozone fluctuations can lead to ozone abundances that are less than 50% of average values. As shown in many studies, these mini-hole ozone events are primarily the result of ozone variability due to dynamical, rather than chemical, processes.

In this study, we develop a climatology of mini-hole ozone events using total column ozone satellite data from the Aura Ozone Monitoring Instrument (OMI) and reanalyses. We evaluate their representation in reanalyses using their area, their distance and their orientation with respect to the events found in OMI data. We also use ozone vertical profiles from the Aura Microwave Limb Sounder (MLS) to study the reanalyses vertical representation of such events. The accuracy of their representation is being used as a metric to assess the reanalyses ability to capture dynamically-driven ozone variability.

Keywords: Ozone miniholes, reanalyses

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