

4.243 Understanding Differences in Satellite Records of Tropospheric Ozone Over the Past Decade .

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Abstract:

Given the importance of tropospheric ozone as a greenhouse gas and a hazardous pollutant that impacts human health and ecosystems, it is critical to quantify and understand long-term changes in its abundance. Satellite records are beginning to approach the length needed to assess variability and trends in tropospheric ozone, yet an intercomparison of time series from a joint TES/IASI dataset, the IASI standard product, and the OMI/MLS tropospheric column undertaken as part of the Tropospheric Ozone Assessment Report shows substantial differences in the net change in ozone over the past decade. We discuss the possible sources of differences in these datasets and describe a methodology for quantifying expected differences in the ability of each product to capture long-term variations in ozone. We also discuss the role of changes in the magnitude and distribution of precursor emissions and in downward transport of ozone from the stratosphere in determining tropospheric ozone abundances over the past decade.