

(49-220415-A) Tropical Tropospheric Ozone Distribution and Trends

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Tropospheric ozone is the third most important greenhouse gas, is detrimental to human health and crop and ecosystem productivity, and controls the oxidizing capacity of the troposphere. Tropospheric ozone in the tropics has been shown to be quickly increasing especially in Southeast Asia compared to regions in the Northern mid-latitudes, and based on model simulations the global ozone increases have been mostly explained by the shift of emissions toward the equator. Current and future geostationary satellite missions are designed to monitor air composition for air quality and climate purposes. Unfortunately, the tropics are not always covered. In this context, the present study presents the analysis of in situ data to assess the tropical tropospheric ozone distribution and trends, and evaluates current polar orbiting satellite products.

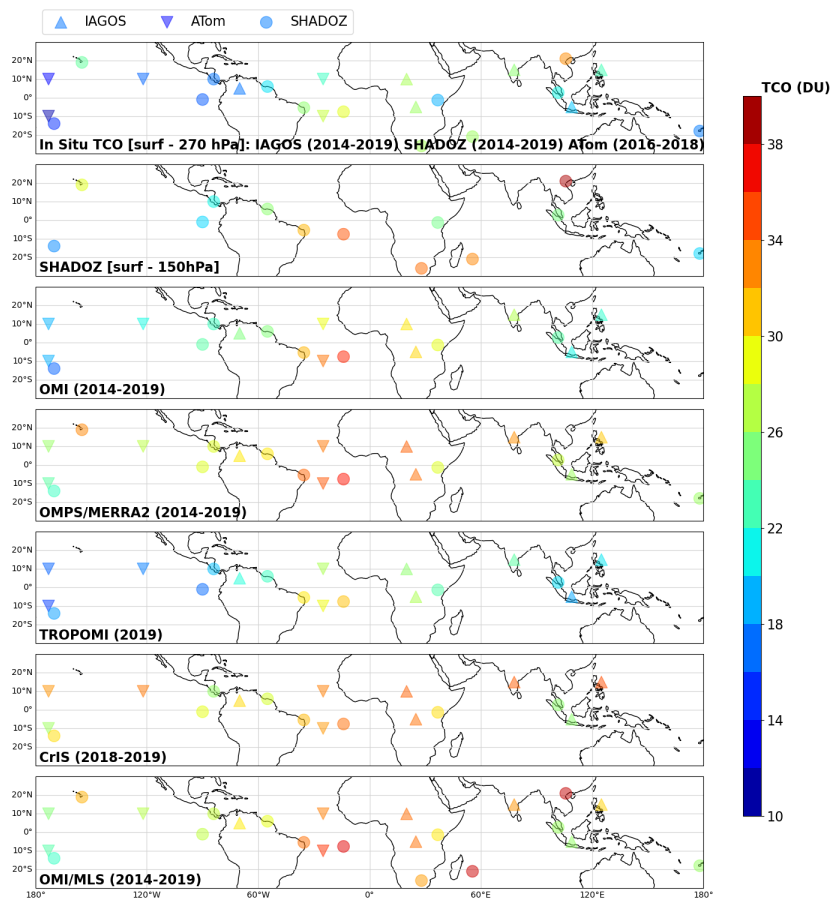


Figure 1. Tropospheric Column Ozone (TCO, surface-270 hPa) from in situ data (IAGOS, SHADOZ and ATom) (top panel), TCO (surface-150 hPa) from SHADOZ (2nd panel), and from OMI, OMPS/MERRA2, TROPOMI, CrIS and OMI/MLS.