

# Modeled Aerosol Composition and Physical Properties in Global Tropical Tropopause Layer

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## Abstract

Composition and physical properties of aerosols in global Tropical Tropopause Layer (TTL) are not well studied in the era of either observations or modeling. First, limited in-situ observations are made in TTL region; second large uncertainties exist on parameterizations of physical process (e.g. wet deposition, aerosol-cloud interaction, microphysics) in global climate models. In this study, we use a sectional aerosol model coupled with Community Earth System Model (CESM/CARMA) to investigate the temporal and spatial variability of TTL aerosols including organics, sulfate and dust. Specifically constrained by PALMS measurements over Costa Rica in 2004 and 2006, we compare the aerosol distribution near POSIDON region with the rest of the TTL.