

Vertically resolved measurements of black carbon aerosol over the Pacific and Atlantic

Joshua Schwarz (1), Joseph Katich (1,2), Bjørn Samet (3), and the ATom Science Team

(1) NOAA, ESRL/CSD, Boulder, United States (joshua.p.schwarz@noaa.gov), (2) CIRES, University of Colorado, Boulder, United States, (3) Center for International Climate and Environmental Research–Oslo, Oslo, Norway

The NASA Atmospheric Tomography Experiment (ATom) campaign, based on undirected \sim pole-to-pole airborne sampling of the remote atmosphere over the Pacific and Atlantic basins, has produced finalized datasets from August 2016 and February 2017. Here we present an overview of refractory black carbon concentrations and microphysical properties encountered in this region from near the surface to 12 km altitude, with comparison to the climatological concentration predictions from the AeroCom model ensemble. Comparison of ATom to data from the 2009–2011 HIPPO dataset over the Pacific indicate the near-climatological value of the observational datasets, while the AeroCom comparison indicates that emission uncertainties generate model low-biases over the regions influenced by African outflow, quite in contrast to the process-dominated high biases observed over the Pacific and at high altitude globally.