

Profiles of reactive trace gases over remote oceans during ATom

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The Atmospheric Tomography (ATom) mission deployed an extensive gas and aerosol payload on the NASA DC-8 aircraft on four campaigns spanning each season. ATom systematically sampled the atmosphere from 0.2 to 12 km altitude, from 85 °N to 65 °S, in both the Pacific and the Atlantic to provide detailed profiles of chemical composition over the remote oceans. We will present profiles of reactive trace species, such as O₃, NO_x, NO_y, HO_x, HCHO, and several other short-lived source gases. We will combine these measurements with results from a 0-D box model to show their utility in (1) evaluating gradients in latitude/season, (2) identifying contributions of pollution from long-range and convective transport, and (3) evaluating column measurements from remote sensing satellite instruments.