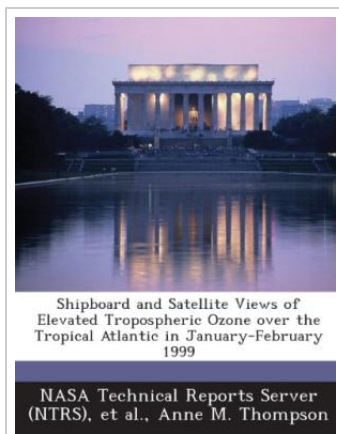




Shipboard and Satellite Views of Elevated Tropospheric Ozone Over the Tropical Atlantic in January-February 1999

By Anne M Thompson

Bibliogov, United States, 2013. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****.During the Aerosols99 trans-Atlantic cruise from Norfolk, VA, to Cape Town, South Africa, daily ozonesondes were launched from the NOAA R/V Ronald H Brown between 17 January and 6 February 1999. A composite of tropospheric ozone profiles along the latitudinal transect shows 4 zones, which are interpreted using correlative shipboard ozone, CO, water vapor, and overhead aerosol optical thickness measurements. Elevated ozone associated with biomass burning north of the ITCZ (Intertropical Convergence Zone) is prominent at 3-5 km from 10-0N, but even higher ozone (100 ppbv, 7-10 km) occurred south of the ITCZ, where it was not burning. Column-integrated tropospheric ozone was 44 Dobson Units (DU) in one sounding, 10 DU lower than the maximum in a January-February 1993 Atlantic cruise with ozonesondes [Weller et al., 1996]. TOMS tropospheric ozone shows elevated ozone extending throughout the tropical Atlantic in January 1999. Several explanations are considered. Back trajectories, satellite aerosol observations and shipboard tracers suggest a combination of convection and interhemispheric transport of ozone and/or ozone precursors, probably amplified by a lightning NO source over Africa.



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