



Horizontal and vertical scaling in the troposphere

A. F. Tuck, S. J. Hovde and D. D. Parrish

NOAA Aeronomy Laboratory, Boulder, Colorado, USA (adrian.f.tuck@noaa.gov)

The NOAA Gulfstream 4 aircraft made flights over the Pacific Ocean in January - March 2004 from Honolulu, Hawaii; Anchorage, Alaska and Long Beach, California. We examine the horizontal scaling in this region of winds, temperature and ozone in the upper troposphere with a generalized scale invariance (GSI) analysis. Dropsondes were also deployed on many long level flight legs, providing 4 Hz observations of temperature, pressure, winds and humidity from approximately 13 km to the surface. The data are examined to provide an evaluation of the vertical scaling in the context of GSI, and physical interpretations are offered.