

Title: An Investigation of High Frequency Motions in the Tropical Tropopause Layer near Convection

Leonhard Pfister, T. P. Bui, Jon Dean-Day, Boon Lim, and Paul Lawson

Indirect evidence indicates a role for vertical mixing in the Tropical Tropopause Layer (TTL).

In the past 20 years, high altitude NASA aircraft such as the ER-2, WB-57, and Global Hawk

have been making 20hz measurements of vertical velocity and other meteorological parameters in the Upper Troposphere-Lower Stratosphere region,

many in the tropics, most recently in connection with the Airborne Tropical Tropopause

EXperiment (ATTREX). In the stable environment of the UTLS, high frequency activity occurs

in bursts, presumably in connection with nearby convection or strong vertical shear associated

with larger scale gravity waves.

This paper examines tropical high frequency aircraft data to obtain some basic information about

the distribution and character of high frequency activity in vertical velocity in the TTL.

In particular, we focus on relating the high frequency activity to nearby tropical convection.