

Interactive comment on “Cirrus clouds in convective outflow during the HIBISCUS campaign” by F. Fierli et al.

Anonymous Referee #2

Received and published: 9 July 2007

The article shows the radiative-dynamical processes of the upper atmosphere over the tropical latitude. The subject is interesting. It is possible to incorporate specific dynamical processes, particularly characteristics of gravity waves propagation and dissipation. The author should also mention about the related phenomena such as ITCZ, which might be contributing to the upper tropospheric processes. The manuscript need to be revised before final publication.

Some of the comments are as follows:

1. Figure 3 : Upper as well as middle pannel of the graph shows the presence of gravity waves at about 10 km altitude and damping at 13 km altitude. The spectral analysis should be done for identification of gravity waves. The spectral analysis between 9

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

and 15 km altitude can give the gravity wave characteristics, particularly propagation and damping over the upper tropospheric region. The changes in the periodicity and amplitude of gravity waves can be explained with possible physical mechanism.

2. Figure 4 : The specific humidity derived in left panel can be confirmed by some other input data as well as assumptions. The large variability in humidity variation is seen at the lower troposphere as well as 12 km altitude. The possible relation between aerosol optical depth and uplift time should be mention.

3. Figure 5 : The influence of wind variability at the height of about 12 km should be specified. The zonal wind at the upper troposphere might be responsible for the large variability. The zonal wind also influencing the convective system as well as cloud optical depth. The wind variability utilized in the model should be mention quantitatively.

4. The location of the ITCZ during the period of observation should be mention. Does it have any influence on the zonal as well as meridonal wind variation ?.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 6737, 2007.

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper