

## ***Interactive comment on “Cirrus cloud-temperature interactions in the tropical tropopause layer: a case study” by J. R. Taylor et al.***

**Anonymous Referee #2**

Received and published: 18 July 2011

The paper of Taylor et al. presents a case study of an extensive and exceptionally long living thin cirrus cloud observed by satellite in the TTL. The observations are thoroughly described and several plausible scenarios to explain them are discussed. Since the formation and time evolution of TTL cirrus are up to now not well understood, the study contributes to improve the current knowledge of these climatically important cloud type.

The manuscript is well organized and fluently to read, the figures are appropriate and the results well illustrated.

Thus, I recommend the paper for publication in ACP with only a few minor comments listed below.

C6535

1) Page 15746 - 15747:

*‘TTL cirrus are typically thin lamina, with low optical depths (often subvisible, optical depths less than 0.03 (Sassen and Cho, 1992)). These thin, often sub-visible clouds can have optical depths of less than 0.03 and are the most common form of cloud in the TTL (Wang and Dessler, 2006).’*

I think this should be:

TTL cirrus are typically thin lamina, with low optical depths. These thin, often sub-visible clouds can have optical depths of less than 0.03 (Sassen and Cho, 1992) and are the most common form of cloud in the TTL (Wang and Dessler, 2006).

2) Page 15746, line 12: (super)saturated → supersaturated

3) Page 15751, line 26 (Fig. 1): please indicate in the text and in the caption of Fig. 1 the parameter which is shown.

4) Page 15753, 3rd paragraph: please indicate the absolute cloud temperature range.

5) Page 15754, line 8: I would find it much more interesting to see the vorticity patterns of the intrusion instead of Fig. 5!

6) Page 15755, first paragraph: I would not enclose parts of sentences in brackets as is done three times in this paragraph.

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Interactive comment on Atmos. Chem. Phys. Discuss., 11, 15745, 2011.

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