

Review of the paper:

**An Assessment of the Impact of ATMS and CrIS Data Assimilation on Precipitation Prediction over the Tibetan Plateau**

By:

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**General comment**

This paper discusses the impact of the DA on the precipitation forecast over the Tibetan Plateau (TP) for July 2015.

In particular, the paper shows the impact of assimilating advanced technology microwave sounder (ATMS) and cross-track infrared sounder (CrIS) satellite data on precipitation prediction for the following two days. The impact of ATMS is positive and apparent, while more controversial results are obtained for CrIS. A justification of this behaviour is given.

The paper was improved compared to the first submission and it is almost ready to be published on AMT. The main problem, in the actual form, is the English, which is sometime not clear and there are sentences that are not clearly understandable. I recommend a general review of the English by a mother tongue.

In the following, there are my specific comments. They are all minor.

**Specific comments:**

Lines 294-295: I would rewrite the sentence as follows to clarify that you are considering the monthly averaged daily precipitation: "It was found that monthly averaged F24H precipitation ranged from 6.0 to 30.4 mm/day, while the monthly averaged L24H precipitation ranged from 6.0 to 29.5 mm/day."

Line 315: .... monthly mean **daily** precipitation ....

Line 322: I would write 6 mm/day to stress better that you are considering a monthly mean of daily precipitation. Also in the Figure 6 caption.

Lines 335-336: I would write: " ....this specific pattern can help improving WRF-ARW forecast in the future."

Lines 348-349: Use "statistics" in place of "methods".

Line 351: ...monthly mean **daily** precipitation ....

Line 351: delete "the" before CTRL.

Line 361: use "behaviour" in place of "pattern".

Line 368: the thunderstorm is defined as the precipitation of 50 mm. I guess it is 50 mm or more. Please, check.

Line 378: change “one” with “the”.

Lines 412-413: I would write: “The equation of water vapour flux for unit length, integrated from the surface to the top of the atmosphere ( $\text{kg}\cdot\text{m}^{-1}\cdot\text{s}^{-1}$ ) is:...”

Line 419: specify which is the “top” of the atmosphere (hPa value).

Lines: 469-471: “Comparisons indicate ...”. I cannot understand this sentence. Rephrase.

Line 483: “compared with” -> “compared to”.

Lines 508-509: “On the other hand...”. This sentence is not understandable. Rephrase.

## **References**

Line 58: Li et al. 2014 is missing in the references.

Line 69: The reference of Maussion et al. 2011 is incomplete.

Line 76: The reference Eyre et al. 1992 is incomplete.

Line 86: The reference Warner et al. 1997 is missing.

Line 86: Kazumori et al. 2013 is referenced as 2014.

Line 195: There are two papers Zhu et al. (2014) in the references. Check which is the right one.

Line 231: Han, 2006 should be Han et al. 2006.

Line 572: This paper is never referenced in the paper.

Line 574: This paper is never referenced in the paper.

## **Figures and captions**

Table 2 caption: “is chosen”.

Figure 2: is the ratio expressed as percent on the right y-axis? Clarify.

Figure 7: In the caption, POD and POFD aren't in the correct order.

Figure 11: In the caption: “... for the 8 mm/day threshold ...”