

## ***Interactive comment on “Evaluation of TRMM rainfall estimates over a large Indian river basin (Mahanadi)” by D. Kneis et al.***

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We thank referee 2 for his/her comments. Our suggestions can be found below:

**1) The word “gage” should be corrected as “gauge” in whole text of paper.**

OK, will be changed. We'll also try to eliminate other occurrences of American spelling.

**2) In page 1173 line 12 instead of word “facts”, it is better use “specifications”.**

OK, will be changed.

**3) In page 1174, line 3 instead of the word “correctness”, it is better use “accuracy”.**

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We prefer to keep the current wording. This is because of the fact that the described data processing does not contain any numerics or approximations. Thus, there can only be two outcomes: Correct results or garbage.

**4) Equation 1 is not so clear. What is reference for defining the equation 1?**

The idea is to merge the daily rain gauge data (reliable with respect to quantity) with the 3-hourly TRMM data (higher temporal resolution but more uncertain with respect to quantity). This is reflected in the first case of Eq. 1 where  $G_{24}$  is the daily gauge observation and the ratio  $SRR_3/SRR_{24}$  is a dimensionless weight representing the 3-hourly pattern. The second case is necessary to handle situations where some precipitation was collected by the gauge but the satellite-based estimate is zero. Here, preference is given to the ground observation and the rainfall is distributed uniformly over the day (as if no satellite estimate was available).

We suggest to insert the following text right after Eq. 1:

"Eq. 1 assumes that, in terms of cumulated rainfall, ground observations are more reliable than remotely sensed estimates. That's why the satellite information is used as a dimensionless weight only (first case). In the second case of Eq. 1, the satellite-based estimate is simply ignored and the gauge-recorded rainfall is distributed uniformly over the day."

**5) The situation of gauges in Figure 1 and Figure 2 is not the same. Please show the topography of study area in figure 1 too.**

Please note that Fig. 1 shows stream gauges whereas Fig. 2 shows rain gauges. For clarification, we suggest to add the stream gauges (triangle symbols) and the sub-basin identifiers in Fig. 2. The altered figure was attached.

Using the topography as a background makes the figures hard to read. We suggest to keep the background as is. Since WGS84 coordinates are provided in the figures, interested readers can easily view/download any geo data of interest using web resources

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(for example <http://www.diva-gis.org/gdata>).

**6) It is better that the “3.3.6 Model validation” Section move to Results Section.**

We agree. Section will be moved.

**7) In Page 1181 line 24 the word “week” should be changed as “weak”.**

Will be corrected.

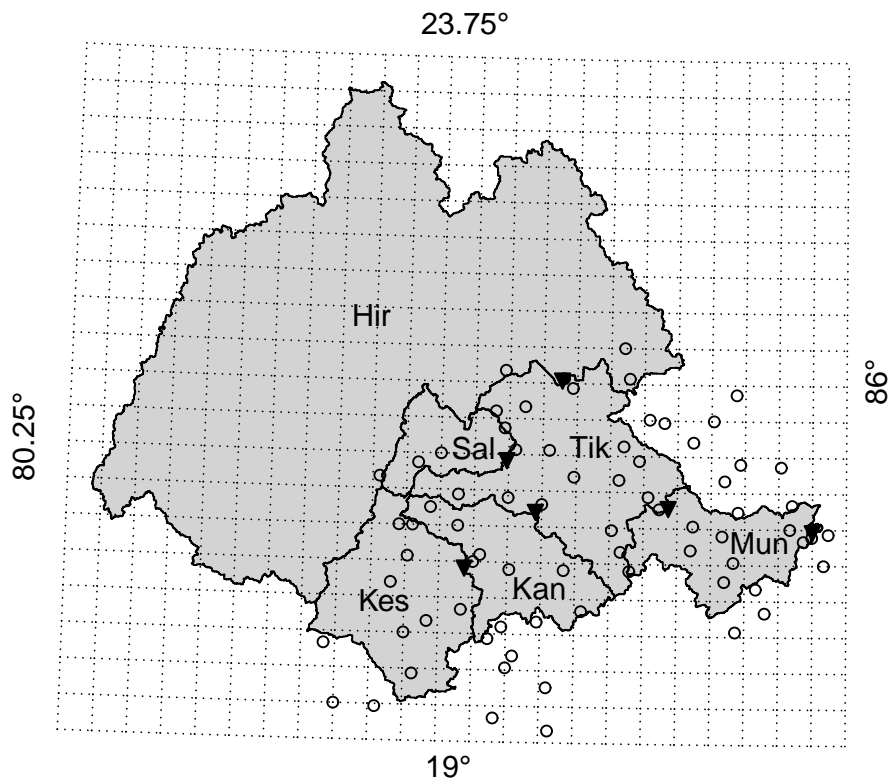
**8) The paper should be undergo the English proof.**

We interpret this as a note to the editor.

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 11, 1169, 2014.

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**Fig. 1.** Modified Fig. 2

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