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Atmospheric Measurement Techniques Discussions

Interactive comment on "Validation of new satellite rainfall products over the Upper Blue Nile Basin, Ethiopia" *by* Getachew Tesfaye Ayehu et al.

Anonymous Referee #2

Received and published: 18 February 2018

General comments

In this paper an extensive validation of satellite precipitation products with rain gauge measurements in Ethiopia (Upper Blue Nile region) is performed. The study is done thoroughly, and much statistical comparison information has been collected. This is a useful validation paper.

The presentation needs, however, improvements:

- Please carefully check the English language throughout the paper: for example, check plural - singular, check articles (a – the are sometimes interchanged).

- Please add in the figure caption the location and period of the measurements

- Please add informnation in the figure legends in stead of in the x/y axis labels

In Section 5, please shorten the description of the results. In the text, mostly the results of the Tables are repeated. Please only give the highlights, and focus on discussing the physical causes and mechanisms.

Specific comments

Abstract:

- Biases: what is the unit? what is the bias in percent?

- More quantitative results on the CHIRPS accuracy should be added to the abstract, since that was the aim of the paper.

p. 2, l. 24-2: spaces at the end of sentences are missing

p. 5, l. 9: which satellite data was used?

p. 5, l. 10: calibrated

p. 6, l. 12: clarify this sentence

p. 6, l. 19: m > M

Please use italics for all symbols: H, M, F, i, t, n.

Eqs. 1 - 5 : Please write the sums clearer: summation from i=1 to i=n. What does the index i mean?

Eqs. 1 – 3: Please use spaces in these conditional relations.

P. 7, l. 16: Where > Here

p. 7, l. 16: Which unit has t?

p. 7, l. 22: What is the relation between r and Rˆ2 used frequently in the paper? If it is the same quantity, then use only one.

P. 8, l. 6: Where > Here

p. 8, l. 20: Why do these discrepancies occur?

p. 8, l. 24: at a different elevation > per elevation

p. 10, l. 27: more prominent

p. 10, l. 28-29: please clarify this sentence.

p. 11, l. 20: TAMSAT

Figures:

For all figures: please indicate the region and the time period to which the data belong.

Caption Fig. 1: . . .. are with high elevation . . ..

Figure 2: Why are the data sets TAMSAT2 and ARC2 so poor in horizontal structure of precipitation patterns? Is this due to the binning scale ? Is it still useful to consider these low resolution datasets?

Figure 2: The figure suggests that the Kiremt season has more precipitation than the total year for the TAMSAT3 dataset. That cannot be correct.

Figure 2: For these important maps, can you please a give lat/lon grid like in Fig. 1? Tables 1 and 3: What do the bold numbers mean?

Fig. 3: please zoom in on the 0 - 200 mm part, which is most interesting.

Fig. 6: what is the unit of the Bias?

Fig. 7: Please give the station name and altitude in the figure legend, not in the y-axis label.

Fig. 7: caption: of year > of a year

Fig. 8: for clarity, please put the data set name in the legend or above the figure, but

not in the x-axis label.

Fig. 9, 10: caption: at each twelve months > for each month

Fig. 10, caption : 2025 > 2015

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