

Interactive comment on “Evaluation and bias correction of satellite rainfall data for drought monitoring in Indonesia” by R. R. E. Vernimmen et al.

Anonymous Referee #1

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Review of the paper entitled “Evaluation and bias correction of satellite rainfall data for drought monitoring in Indonesia” by Vernimmen et al.

General

The authors test the systematic errors of three rainfall products when used across Indonesia and perform a bias-correction to the best performing of them.

The paper is generally well written and the analyses well done. I have however three major issues with the paper:

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1) The study tells us that TRMM performs best above Indonesia, compared to the two other products. However, what can we as a hydrological community deduce from this in general? Is TRMM better for the whole globe between -60 and 60 degrees? Is it better in Monsoon areas or tropical regions? No general conclusions can be drawn from this study as to why TRMM does better and what this means to other areas. Without such an analysis the paper does not further the hydrological knowledge in a significant manner. The authors should pay much more attention to the general implications of their result for them to be of more general value, as is expected from research published in HESS.

2) I find the reported decrease in bias and accuracy between bias-corrected and non-corrected rather marginal (Table 4), and for the Darwin validation not improving the results.

3) The bias-correction formula is quite weird. It is a power law that only guarantees that P^* has the right unit if the prefactor a has the unit $\text{mm}^{(1-b)}$. What does that mean. Also, I would like to see a plot of the bias against P to see why this relationship fits so well. Would a simple monthly correction of both mean and standard deviation not be much simpler? Justify why this did not work.

Small remarks:

a) page 5972, lines 19-22: why two months? What is a high likelihood? Quantify!

b) Section 2.3: you cannot say that CMORPH or PERSIANN underestimate/overestimate compared to TRMM. TRMM itself has errors too, so one should say something like: compared to TRMM estimates of CMORPH are higher along the coast. . .etc.

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