

Interactive comment on “A global satellite assisted precipitation climatology” by C. Funk et al.

Anonymous Referee #1

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Summary: The authors provide a technical overview and performance evaluation of a new global precipitation climatology derived using in situ climate normals, satellite data, physiographic variables, and a novel interpolation technique. The product is an important contribution for climate analysis in data sparse regions, both because it offers what appears to be a superior precipitation climatology relative to other widely used products and because it forms the foundation for the CHIRP and CHIRPS precipitation monitoring systems. Many researchers now employ CHIRP/S for studies of climate and hydrology in tropical regions, and this paper provides useful documentation on the process used to generate the underlying climatology.

The paper is clearly presented and includes all essential detail for potential users of the data product. I believe that it can be published in final form after only minor re-

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vision. That said, I suggest that the paper would benefit from additional figures (with associated supporting text) that address key performance indicators and product interpretation. Proposed additional figures include:

1. A map of the final product! It seems odd to read a paper that introduces a precipitation climatology and never see what the dataset looks like. It might be appropriate to show difference maps with CRU or Worldclim as well, though it might be more informative to show those differences for specific regions rather than at global scale.
2. Spatial comparisons of CHPclim performance with that of CRU and Worldclim in selected focus countries. For example, a map of bias (or MAE, or temporal correlation) at evaluation stations in Ethiopia during the rainy season would enrich the authors' claims that CHPclim offers its greatest advantages over complex terrain and data limited regions.
3. The general conclusion that the satellite-assisted CHPclim product offers greater reliability in complex terrain is quite interesting, considering that rough terrain is often identified as a major challenge for microwave precipitation estimates. It would be interesting to see a figure that plots error in CHPclim and in the comparison products as a function of elevation and/or other topographic characteristics in order to substantiate this claim.
4. As a corollary to #3, it would also be interesting to see maps or scatterplots that show how CHPclim differs from other products in estimated precipitation at very high elevations—i.e., elevations higher than most or all available stations. It won't be possible to evaluate performance in these zones, but simply characterizing the difference is important for hydrological applications and trend analysis.

Minor comments / typos:

p. 405, line 1: I only see four satellite products on this list, but the text states there were five. The "fifth predictor" introduced in line 16 is an average of two satellite products and

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is not an independent product.

p. 405, line 20: slope is listed twice

p. 411, line 16: please explain why the thin plate spline would fail in this regard.

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