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Interactive comment on "WHU-SGCC: A novel approach for blending daily satellite (CHIRP) and precipitation observations over Jinsha River Basin" *by* Gaoyun Shen et al.

Anonymous Referee #1

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Minor comments - Line 14: By mentioning the CHIRP database the University of Santa Barbara needs to be cited as developer. Thus, the sentence has to be changed in: . . . the Climate Hazards Group InfraRed Precipitation (CHIRP, daily 0.05°) satellite-derived precipitation developed by the UC Santa Barbara - Line 52: When the CHIRPS dataset has been mentioned the developer (UC Santa Barbara et al.) has to cited as well. - Line 109: Section 2.2 can to be compacted in only 2 subsections for a better reading: 1) precipitation gauged observations and 2) gridded precipitation+CHIRPS - Line 159: what's "SICR approach"? - Line 162 "C3 (pixel physically similar to C1C2)". What does it mean "physically"? - Line 180 ". . .satellite precipitation estimations deviated from observed data . . .". Really satellite precipitation even though retrieved are always mea-

sured data. Thus, it is better replacing the above sentence with: "satellite precipitation estimations deviated from ground-based measurements" - Section 4 – This section is too much subdivided getting quite difficult the reading. Please, let you group the discussion. - Table 6: What's "wet precipitation?" You mean, probably liquid precipitation, right?

Major comments to Authors The proposed manuscript tries to improve the performance of the CHIRP/S datasets by statistically adjusting the original data over complex terrain. The general statistics described in table 5 reveals very light improvements even though WHU-SGCC performs better and CHIRPS dataset seems to be worse also respect to raw data (CHIRP). Skipping to the performance evaluation for rain categories, how do you justify the inversion of BIAS tendency from the category (5,10) to > 40 (see table 6)? The accuracy of WHU-SGCC method seems to be limited to low precipitation (<10, not >20) where the model tends to overestimate. For precipitation greater than 10 the WHU-SGCC starts to underestimate. Please, let u clarify this! Really, the validation of the WHU-SGCC method is only limited to the Jinsha River Basin in summertime 2016 thus new and more accurate validation campaigns have to be done. On that, the challenging efforts to apply and validate a new method over orographically complex terrain have to be supported by new application on similar morphology where the rain-gauges are typically sparse. Furthermore, since during the monsoon season precipitation is typically higher than 20 mm, how the WHU-SGCC will perform? Of course, this question needs to be exhaustively answered by a new validation using the same methodology described in the manuscript.

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