Hydrol. Earth Syst. Sci. Discuss., 7, C4827–C4828, 2011
www.hydrol-earth-syst-sci-discuss.net/7/C4827/2011/

Hydrology and Earth System Sciences Discussions

Interactive comment on "Evaluation of TRMM Multi-satellite Precipitation Analysis (TMPA) performance in the Central Andes region and its dependency on spatial and temporal resolution" *by* M. L. M. Scheel et al.

Anonymous Referee #2

Received and published: 27 January 2011

This study evaluates a global satellite rainfall product (the NASA/GSFC TRMM 3B42 (Version 6) over a complex terrain area in Central Andes region. Evaluation is performed using daily rain gauges available over a limited area in the study region. The study is limited in terms of scope and significance. The main points are listed below:

- the TRMM 3B42 V6 is just one of the several high-resolution global satellite products currently available. For this study to gain significance it should evaluate additional global satellite products available to the community (such as the one from NOAA

named CMORPH, and the one from the University of California named PERSIANN)

- The gauges used in this error analysis are very limited in terms of area coverage. Uncertainty associated with gauge sampling error can be significant, particularly due to the orographic precipitation that is associated with spatial gradients. Proper evaluation of the gauge sampling error and accounting for this error in the satellite error analysis is needed.

- The spatial integration discussed in this paper does not make much sense given the limited gauge density. Going from 0.25 to 0.5 degrees increases gauge sampling uncertainty that most likely balances off the gain from smoothing retrieval error variability.

- The gauge-satellite rainfall merging is not well justified and lacks proper evaluation. Specifically, what is the added value of merging satellite data with the gauge network? The authors should use independent gauge data to verify improvements from this satellite-gauge merging to demonstrate improvements over what is already done at the V6 gauge based bias adjustment product. Furthermore, in most remote area on earth we do not have gauge data to provide in situ measurements, or the gauge network coverage is not adequate to support co-Kriging applications (i.e. gauge interpolation lengths longer than the rainfall correlation length). The authors should discuss those issues and provide a clear justification of the use of their proposed data merging scheme.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 7, 8545, 2010.