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Discussions

Interactive comment on "Global gridded precipitation over land: a description of the new GPCC First Guess Daily product" *by* K. Schamm et al.

K. Schamm et al.

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Dear Mr. Suwal,

Thanks for reading our paper and for your comment. Below we answer your comment. Your comment helps to improve the paper.

With kind regards, Markus Ziese (corresponding author)

Comment: Dear Authors Overall impression is good. As you said, it is 1x1 degree spatial scale data which does not seem to incorporate the regional level of accuracy. I would like to pin point about Orographic Rainfall in Himalayan Region. It contributes

a lot in Himalayan Region. As you mentioned, the density of rain gauge stations in Himalayan Region might have affected your accuracy in this region. thanks

Answer: With this First Guess Daily analysis we are limited to the application of near-real-time data. We try to use as much station data as possible; therefore we extrapolate monthly totals if we have at least 70% data coverage at the station over the month and try to fill observation gaps in precipitation with weather type information (see sect. 3.2, p. 443, l. 10-13 and sect. 4.2, p. 444, l. 15-17 and sect. 4.3, p. 445, l. 24-25). If we could use more stations, we would be very happy. Nevertheless, the data set includes orographic rain. One good example is the 1st of July in 2012 (see Fig. 1). Large precipitation totals were interpolated at the South-Western slope of the Western Ghats and low amounts in the leeward direction to the North-East.

A new paragraph was written to address orographic characteristics of precipitation and the problems of missing observations and low station density. It replaces the paragraph at page 438, lines 17 to 19.

"Gridded products of rain gauge measurements also have their disadvantages. The reliability of the analysis depends on the station density (Arkin et al. (1985), Rudolf et al. (1994), Schneider et al. (1993), see also Sect. 4.4). As the station density decreases, the uncertainty of the calculated area mean increases. Also individual large precipitation totals at a station are smoothed. Depending on the station density and grid cell size, grid cells including no stations are likely. In this case precipitation totals outside the grid cell are applied to calculate the precipitation amount in this cell. Some interpolation schemes use a minimum number of stations as input data (Shepard (1968), Krige (1966)). Therefore stations from other grid cells influence the computed precipitation total at a cell, whenever less than the minimum number of stations are found within this cell. Furthermore orographic characteristics are smoothed if the grid cell size is not small enough or there are no measurements within it. The users have to keep in mind that a high resolution gridded data set does include small scale characteristics of precipitation fields only if the precipitation field is sufficiently sampled by rain gauges."
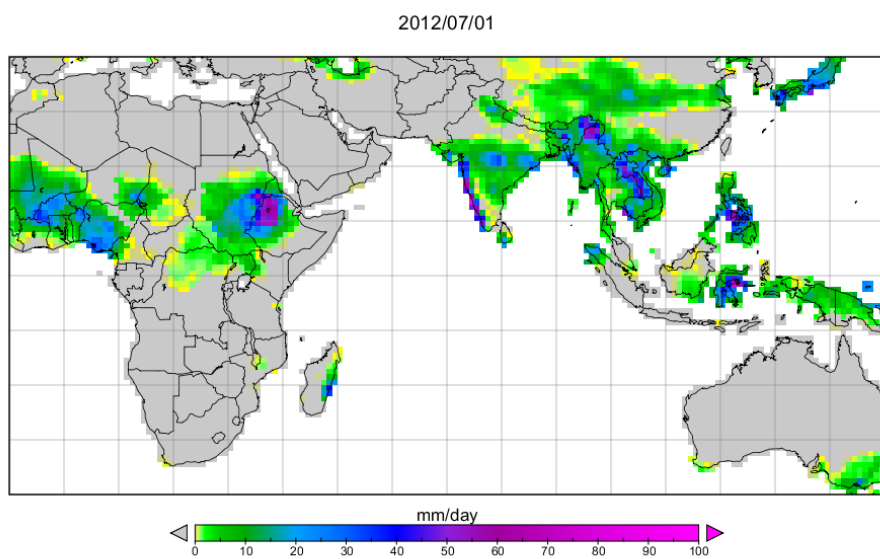
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Fig. 1. First Guess Daily precipitation for 1st of July in 2012.

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