Hydrology and
Earth System
Sciences

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Discussions

Interactive comment on "Extreme weather events in the Sneeuberg, Karoo, South Africa: a case study of the floods of 9 and 12 February 2011" *by* R. C. Fox and K. M. Rowntree

Anonymous Referee #3

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The paper deals with a comparison between rain gauges and modeled precipitation to asses the short and long-term ability of the modeled data for period 9 to 12 February 2011. The authors show that the satellited based data underestimate the intensity of the rainfall that led to the floods in 2001.

Unfortunately, in the present format I have to reject the paper. The paper lacks coherency, clear language, assertiveness on the used method and findings. The authors should approach the introduction with a clear message and present a strong and understandable methodology.

More pressingly:

The abstract needs some tidiness.

The introduction has to rewritten. It contains unnecessary information and lacks structure. The amount information given could be presented in couple of sentences (e.g: the entire p:10811, p:10812, L:4-16, p:10812, L:17 to p:10813 L:2). Also, there is no consistency between the paragraphs. In p:10813 L:14-20, the authors state their hypothesis and goal. I would advise the authors to restructure the introduction to contain and answer questions such as: what are we examining, why, what is the literature on statistical comparison between dataset, what improvements are we presenting (specific to our goal), the importance of topography etc. And try to separate the methodology from the introduction as its seems that most of the introduction can be used in the methodology section.

Section 2,3 and 4 need restructuring and clarifications. Separate the data and area description form the methodology and clarify the analysis which was used to treat the data. For example start with your area, observed and modeled data description. Several of the information regarding the stations can be summarized in a table. Proceed by explaining the methodology; first the regression analysis for the local rainfall data. In P:10815, the regression equations for the cummulative rainfall (I presumed annual, please clarify), can be described through the general equation (y=ax-b) and present the R2 in a table. Second, explain the data treatment. P:10817 L13: "The daily record was analyzed..." in which way it was analyzed? P:10817 L:22 "Rainfall maps . . . ." should be specified that it was accumulated daily precipitation. It is mentioned only later in the following sentences. An explained methodology section must stand out. P:10818 L:6-15 should be consistent with section 5.3; clarify the analysis that it was used.

In the data description it is not clear in which format did the authors treated the Giovanni data. If they were averaged over the study area and then compared to the stations time series, the authors should make that clear and take it into consideration when

explaining the differences between Fig6a&b. A large percent of this mismatch can be due to the fact that the modeled data present a much larger averaged area and the station data are localized. Also in P:10819 L:14-16, the authors's speculation over the storm's profile seems unjustified. In the conclusion section P:10823 L:1-4 the authors describe a localized storm. A storm can be localized and the station data are vulnerable to the topography of the area.

The conclusion section should be separated from the discussion section. The conclusion section should summarize the results and the discussion section should arise limitations, improvements etc.

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