

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

M. Kamruzzaman

mohammad.kamruzzaman@unisa.edu.au

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General comments

I would like to thank the authors for the opportunity to review their article entitled “Extreme weather events in the Sneeuwberg, Karoo, South Africa: a case study of the floods of 9 and 12 February 2011.” Through the paper, authors used several statistical tools to observe the extreme weather events in particularly highlighted most-recent flood’s events during 9th to 12th February, furthermore, a benchmark comparison with long time rainfall behavior in the Sneeuwberg, Karoo, South Africa. The study is optimistic

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and provides some evidence of the benefits of using different application of rainfall measuring like as the Modern-Era Retrospective Analysis for Research and Applications (MERRA), the Tropical Rainfall Measuring Mission (TRMM) and the Global Land Data Assimilation System (GLDAS).

While this is a scientific paper, the technical contribution is, arguably, and fragmented that aims to work on rainfall extreme in South Africa, even worldwide. Firstly, I would like to say; there is insufficient coverage of recent work that has been published in the top-ranking international journal and provides key evidence of rainfall pattern in the South Africa. It is therefore required to review most-recent scientific report and published paper in the journal and place the technical contribution in the context and explore. How does this work improve upon the previous study to on rainfall extreme using statistical tools?

There are numbers of concerns to the authors, in response to query would be could increase the strength this paper and help to be considered for publication as follows:

1. Page 10810, is the abstract, It is required to precise according to their findings.
2. The introduction and literature review in its current form is incoherent and fails to bring out the novelty of the work.
3. In section 2, data information was not clear; I would like to suggest to author's to prepared data information within a table, including variable's name, nature of the data, location based on longitude, latitude, length of the data, missing percentage of data. In the context, explain a method for missing value replacing.
4. In page10815, line 22 to 25, four regressions equation, without any explanation and interpretation, it is quite had to understand for the non-technical readers. It is required a clear explanation why this analysis is important for this study. In section 5, short term, the daily rainfall amount presented in figure 5, there is a very light discussion about data generation.
5. In figure 5, author's presented amount of rainfall, no more statistical information like, temporal and spatial variation. In page 10819, line from 1 to 9, there is some result discussion; which required for at least a statistical test. Furthermore, for hourly data from 9th to 12th February 2011. I would like to suggest calculating the in-

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tensity of rainfall extreme in the observed area. We found the rainfall intensity increase remarkably as duration is decreased and relationship between important to estimate the ratio of hourly rainfall over 24 hours or daily rainfall. In section 5.3, long term, monthly and annual time series was discussed, there is no explanation how this analysis could align the previous section in this study; it seems to be a self-contradictory within work. Because in long time series need to be consider seasonality, trends, climate indices and other confounding factors. 6. In section 5.2, sub title, I would like to suggest, “spatial data analysis” instead of spatial comparison. Before going to result discussion, it is required to add few texts about importance of spatial data analysis, how it could align the previous analysis. 7. To align long-term data analysis in section 5.3, I would like to suggest use a deseasonalised the series derive from original time series and make a benchmark comparison with previous study. Here I have enclosed some reference that is relevant and would be helpful for long-term data analysis. analysis. 1) Kamruzzaman, et al (2011), Non-stationarity in Rainfall and Temperature in the Murray Darling Basin, Journal of hydrological process 2) Kamruzzaman, et al (2013), Wavelet based rainfall-stream flow models for the South-East Murray Darling Basin, Journal of Hydrologic Engineering; 3) Kamruzzaman, et al (2012) Analysis of extreme rainfall intensities in South Australia," with 9th 8th International Workshop on Precipitation in Urban Areas, IWA/IAHR, Switzerland; 5) Todeschini (2012) Trends in long daily rainfall series of Lombardia (northern Italy) affecting urban storm water control. International Journal Climatology; 8. In conclusion, this section is needed to be re-write, present some dot point of finding.

9. In finally, this work strength will be improved using this input and will be considered for publication.

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