

Interactive comment on “Artificial neural networks and multiple linear regression model using principal components to estimate rainfall over South America” by T. S. dos Santos et al.

Anonymous Referee #2

Received and published: 25 September 2015

This article is very relevant because of regions analyzed, some of the most affected by climate change, and because of use of unusual techniques to downscaling climate models. However, the methodology needs to be explored further. It was not clear how the data were used in the statistical techniques, mainly in the ANNs, and how these techniques were applied to downscaling. Exactly because they were unusual techniques, they should be better explained in the methodology. The authors also did not write in the methodology the significance techniques used in the article nor the reasons for choosing these techniques. Also lacked a broader discussion of advantages of these two methods of statistical downscaling with respect to more traditional downscaling methods (e.g. use of regional climate models). The results found at this article

C450

were little explored. Basically, all discussion is found in Table 5. I think if the goal is to compare these two techniques, this comparison should be more comprehensive. In Table 2, there is an error on values for summer/AMZ. The cumulative proportions values do not match with proportions of variance values. The resolution of the figures also seems low in pdf, check this out. The authors should also do a check at acronyms. There are acronyms not previously mentioned (e.g. PCA, page 1323) and acronyms cited in conjunction with its terms at more than one occasion. To conclude, I believe this article is relevant to the publication, but it must still be greatly modified before it is ready to do so.

Interactive comment on Nonlin. Processes Geophys. Discuss., 2, 1317, 2015.