

Interactive
Comment

Interactive comment on “An interaction network perspective on the relation between patterns of sea surface temperature variability and global mean surface temperature” by A. Tantet and H. A. Dijkstra

Anonymous Referee #1

Received and published: 17 September 2013

Summary of the paper: This paper examines the connection of regional SST variations to interannual and decadal variability of the global ocean surface temperature (GOST), the global land surface temperature (GLST) and the global mean surface temperature (GMST). The authors use a Infomap community detection algorithm to find the patterns of connected SST variability. The main results of this study are, that on interannual timescales the GMST/GLST is highly correlated with SST variations of the ENSO community, and on decadal timescales with SST variations of the Indian Ocean-West Pacific (IWP) and North Atlantic (NA) communities.

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Overall Opinion: This paper is well organized and I found the focus on decadal variability of GMST/GLST and their relationship to the SST variations in the IWP and NA communities is interesting. My major concern is that from this analysis one cannot conclude, that the SST in these two communities determines GMST/GLST variability. Even the arguments in the discussion part make it plausible that the SST over the IWP and NA could be the driver of GMST/GLST variations, it can't be excluded that GMST/GLST drive the SST over the IWP and NA or something else is the driver of both. This point should be clarified.

My Conclusion: This paper gives some interesting hints that the decadal variability of GMST/GLST could be driven by SST variations in the IWP and NA region.

Interactive comment on Earth Syst. Dynam. Discuss., 4, 743, 2013.

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