Natural Hazards
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Discussions

Interactive comment on "On the clustering of winter storm loss events over Germany" *by* M. K. Karremann et al.

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Dear Referee R. Caballero,

We thank you for the helpful additional comment, which helps us to interpret our results in more detail. Below you can find our response.

An additional comment: an interesting result remarked upon by the authors (p.1928, l.20) is that the overdispersion index decreases for higher return levels. The authors express some surprise about this behaviour as it is at variance with previous results in Pinto et al 2013. However, it could be argued that the behaviour is not so surprising: as is clear from Fig. 3, clusters usually mix storms of different intensities, so it is natural to expect more clusters when considering lower intensity thresholds (i.e. lower return

levels), while exceedances of higher thresholds will more likely occur in isolation and will therefore be closer to a Poisson process. The different behaviour found in Pinto et al. 2013 may be because that paper looks at very low thresholds, where the sheer number of cyclones leads to regular (undersdispersive) behaviour as there is an upper limit to the density of cyclones in space and time. This effect will decrease as one moves from very low to higher thresholds, yielding an increase in clustering. There may thus by an optimal return value that maximises clustering. Perhaps the authors can comment on this issue in the revised paper.

Answer: We thank the reviewer for this really helpful comment. We insert some more information about this fact in the document: "The decrease of Ψ-values is contributed to the fact, that lower intensities thresholds includes higher intensities thresholds and therefore more clusters are expected. For higher return level the occurrence of cluster is more random and therefore closer to the Poisson distribution."

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 1913, 2014.