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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Brief Communication: Statistical detection and modeling of the over-dispersion of winter storm occurrence" *by* M. Raschke

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Dear Dr. Serinaldi,

Thank you very much once again for your comments. I agree with you; it is a very interesting discussion. Here my response.

Section 2: It is neither claimed nor proved in the paper that the GPD would be the exact model for the number of events for every inhomogeneous Poisson process. Your implicit claim that the GPD would only work for "a very specific type of inhomogeneity" is also not proved. In contrast, the GPD works well in my case as an approximation

for different inhomogeneous Poisson processes because the differences between the NBD and GPD are very small (Fig.2 of the paper). Furthermore, it is practice to use such approximations. For example, the NBD is frequently applied for the number of storm events (e.g., Karremann et al. 2014). This should invalidate your concerns.

P1778L19: I agree and accept your objection and will replace “return level” by “return period” in the final version although it is in contrast to the paper of Karremann et al. (2014).

Section 4: Of course, there is an uncertainty in the model selection by AIC and BIC. But such uncertainty is also part of every significance test. There are no statistical tests or selection criteria which provide total assurance about the selected and/or accepted model (key word: error of the second kind). Nevertheless, AIC and BIC are well established and work well.

Finally a remark: Of course, there are more methods in statistics than only the ML estimation, but the ML method is the most important one. I also agree that there are more than only statistical aspects of a model which have to be considered. But the rules of statistics have to be considered primarily in the statistical part of a model according to my understanding of sciences.

Yours sincerely,

Mathias

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 3, 1775, 2015.