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Discussions

Interactive comment on "Characterizing configurations of fire ignition points through spatiotemporal point processes" *by* C. Comas et al.

Anonymous Referee #1

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This mns presents a direct application of the spatiotemporal K-function to the analysis of the spatiotemporal structure of fire ignition points. The methodology is far from being new, and so the the added value of the paper is in the application. Then, if we focus on the application, this seems to be just an statistical exercise run using some existing code. I am afraid that after reading the mns I can not find enough new ideas, concepts, or modelling strategies that make this mns a valuable contribution, not even in the field of the journal. Note that the paper considers a description-based strategy using K-functions. Then, some statistical inference based on simulations is considered. But the output of the simulations is written in terms of envelopes, and the authors

might have considered adding more formal pvalues. Then, why limiting themselves to description of the Poisson structure and interactions. If the point pattern is not Poisson and shows spatiotemporal interactions, you should go ahead in finding a statistical model describing such structure. Then, based on a close mathematical model, you can provide predictions ahead in time or space. This would be more challenging. Another important fact here is the concept of separability. The authors are assuming separability between the spatial and temporal components of the intensity, but this should be tested in some way, and not taken as a pragmatic working assumption. And also, the intensity functions should be further developed. Non-parametric estimation is a first step when no covariate info is available, but it is easy to think that both spatial and temporal covariate information is available nowadays. Finally, the authors shoud take into account an alternative way of modelling strategy, in this case more based on counts in small regions rather than locations. And make use of lattice data in space and time. A comparison of procedures is a good idea.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 2891, 2014.