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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Urban anomalies in response to rainstorms based on smartphone location data: a case study of eight cities in China" *by* Jiawei Yi et al.

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Revised manuscript is attached in supplement file.

Specific responses are as follows:

1. The smartphone location data needs to be explained further. As the most important data indicator in this study, readers need to know what exact service(s) provided by Tencent may generate location requests. In other words, a table including all Tencent's LBS helps readers infer the "underground" relationship between the anomaly scores and the storm events.

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Discussion paper

Response: Thanks for the comment. We included a table on page 5 to describe the common, though not all, applications that generate Tencent location requests.

2. Is the correlation between peak rainfall intensity and anomaly score statistically significant in Figure 7(c)? This should be addressed.

Response: Indeed. As shown by Fig. 7c, there are only three cities, Haikou, Harbin, and Jilin, showing linear relationship between peak rainfall intensity and anomaly score. Because for the three cities, the linear regression is statistically significant at the level of 0.05. We actually preformed the linear regression analysis for every city, however, the p-values for the other five cities are more than 0.05. So, there are no linear fit lines for them in Fig. 7c. Corresponding revision can be found on page 19 line 5-8

3. The different association between rainfall events and the NLR anomalies should be explained. The impact by the government spending on urban infrastructure, such as drainage systems, as well as the climate zone at different cities can be mentioned in the discussion section.

Response: Thanks for the comment. We added a short discussion on the possible connection with the urban infrastructure level and climatic condition on page 19 line 14-22.

Please also note the supplement to this comment:
https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2019-136/nhess-2019-136-AC1-supplement.pdf

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