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Interactive comment on "Evaluation of Low Impact Development and Nature-Based Solutions for stormwater management: a fully distributed modelling approach" *by* Yangzi Qiu et al.

Yangzi Qiu et al.

yangzi.qiu@enpc.fr

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Dear referees,

The authors would like to thank you for your helpful interactive comments.

We responded point by point to your detailed comments (see AC2, AC7, AC4_supplement, AC5). We accepted almost all of them and explained how we will take them into account in the revision of our manuscript. In the very few exceptional cases of disagreement, we clarified the probable source of misunderstandings (e.g. AC5 about the Rotterdam radar). In what follows, we summarise the main suggested

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revisions.

First of all, we must emphasise the originality of our manuscript, because it deals with the NBS performance evaluation by taking into account the coupling effects of spatial variability of rainfall and land use through a fully distributed modelling approach, as well as the high resolution of X-band radar data. This is a paradigm shift from homogeneous modelling and data to extremely heterogeneous ones.

Furthermore, we also have to:

- put more in evidence the aforementioned general methodological goal, including a comparison of homogeneous runs (project rainfall) vs. heterogeneous runs to demonstrate limitations of the homogeneous modelling (see AC2 and AC4-Supplement)

- make more obvious that we have been working on non-homogeneous three sub-catchments, rather than a unique catchment

- extend our study to another catchment with very different characteristics (see AC7)

- introduce new NBS scenarios (e.g. slightly sloped green roofs) to reinforce the validity of our conclusions regarding heterogeneity (see AC4-Supplement)

- give more specific indications on the necessary adaptations of the hydrological Multi-Hydro model to implement NBS measures (see AC2)

In fact, we already obtained results corresponding to the above-mentioned modifications, and there is no fundamental difficulty to include these new findings in the revised version. With these modifications, we believe that the contributions of our paper to the advancement of hydrological modelling in applied research will be much more visible, and in agreement with the aim and scope of the Journal of Hydrology and Earth System Sciences.

We will also carefully check the quality of English of the revised version.

Finally, we would like to thank you for the time and effort devoted to review our

manuscript.

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