

Interactive comment on “Dynamic neural networks for real-time water level predictions of sewerage systems – covering gauged and ungauged sites” by Y.-M. Chiang et al.

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The Authors have already adequately replied to the comments by Referees #1 and #2.

I invite them to address the points raised by Referee #3 and in particular the most important one, on the meaning of the “ungauged” simulation carried out by forecasting the results of a SWMM model instead of actually observed levels: The use of neural networks (as of any systemic model) in ungauged case studies is far from straightforward, given their very same ‘nature’ of data-driven approaches. Reasons for justifying the use of neural networks instead of SWMM in ungauged basins should be better

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explained. Rather than an ungauged case study, I would consider the RNN based on SWMM outputs a synthetic case study where, in absence of real observations, a model is applied for simulating the output of another model (as it is often the case also for streamflow simulation case studies with inadequate data sets): it may be useful to enlarge the number of case studies but I would not consider it an ‘ungauged’ framework.

In addition, as the comments made by all the Referees indicate, applications of ANN in urban hydrology is not as common as in streamflow forecasting literature and more (also basic) details on their implementation (type of networks and their implementation, and especially a description of the input variables: the use – in real-time - of past water levels in input, for example, is not usual in conceptual and hydraulic models) are probably needed in the Introduction section.

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