

Interactive comment on “Coupling urban event-based and catchment continuous modelling for combined sewer overflow river impact assessment” by I. Andrés-Doménech et al.

Anonymous Referee #2

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The paper is about a coupled model, including three steps: A statistical model to generate a series of synthetic representative rainfall scenarios A sewer network model (Infoworks CS) A hydrologic model to simulate discharges in the Saja – Besaya river system.

In my opinion the paper is well written, the topic is interesting and is within the fields covered by the journal, the developments are solid and they are well described, and, in general terms, I consider the paper good enough to be published.

Anyway, some additional comments must be done:

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The approach based on a limited series of events, instead of a continuous approach by using the full set of rainfall (41 years) should be justified. The possible answers can be a computer time saving, a more comprehensive technique, or simply another way of focussing a problem, but some explanations about this method should be done, as the more common ways of doing such calculus is by calculating in a continuous way.

The independence between Duration, Volume and Peak discharge sounds strange and should be justified in a more detailed way.

If a model as Infoworks is to be used, some figures about computing time could be show, by comparing a continuous calculus of, about ten years, a the full set of 27 events.

The hydrologic model seems to give discharges but it isn't a hydraulic model. Processes as mixing of discharges from CSO into the water body can not be properly modelled. Only a first approach, based on dilution criteria, can be obtained. So, dynamics of oxygen and nitrogen cycles along the river are not studied. As reactions are very important and DOB, oxygen and nitrogen species are fully linked, the approach is very simple. Authors should comment these limitations.

Maybe a coupling with a full 2-D hydraulic model, with turbulence and reactive terms, will improve this work. Anyway, that can be considered a future development.

I consider these comments should be considered before the final redaction of the paper, that could be published without any further review.

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