Natural Hazards
and Earth System
Sciences

Discussions

Interactive comment on "Flood Impacts on a Water Distribution Network" *by* Chiara Arrighi et al.

Anonymous Referee #2

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L15: I would specify which the "worst failure scenario" is (features/return period). L36-39: considerable importance is given to "interdependency". Although this is a very interesting topic, the study is not really focused on interdependency (one hazard, one network). Indeed, I would reduce the text of the Introduction dedicated to interdependency, and just mention the relevance of this study in relation to the broader issue of cascading effects. FIG. 1: some arrows are not drawn. L241: in the abstract, the inhabitants were 385,000... L242: I would specify the name of the river (Arno). L247: rephrase "Flood risk in the area studied is estimated". L250: how about the societal costs? L274-276: 0.5m is the threshold above which failure is determines. How was this thresholds chosen? On which basis? This is very importance since all the results depend from this number. It is not specify how this thresholds was decided or obtained. This needs to be fixed, since an "arbitrary number" is not enough. FIG. 3: specify better what it is meant for "Flooded area" in the caption. Is the "flooded area"

identified by flood depth >= 0.5m? L279-283: is the average depth really significant for such area? I think it would be better to identify significant hotspots (points) in which the flood depths are measured for each scenario (and compared in order to get an idea of the event magnitude). TABLE 3: insert "0" instead of "-". L334-346: this paragraph should be moved to the Introduction, as it reports some literature. L349: does Arrighi et al. (2016) analyze the same city and the same scenario? L389: in the Conclusion, a "given safety threshold" is mentioned, that refers to the arbitrary number of 0.5m. As commented above, this threshold numbers should be justify, since it affects all the results. Or at least, a bit of discussion about it is needed. Could a shift from a binary consideration of flooding (>=0.5m – flood; < 0.5m – not flood) to a function (flood = function(water depth)) be a future progress of the study?