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Hydrology and Earth System Sciences
Discussions

Interactive comment on "The KULTURisk Regional Risk Assessment methodology for water-related natural hazards – Part 2: Application to the Zurich case study" *by* P. Ronco et al.

Anonymous Referee #2

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The paper deals with the very important issue of evaluating flooding risk in complex situations with different classes of exposed elements. In my opinion, the strongest point of the paper is the availability of a large amount data which allows for a in-deep analysis of the flooding risk in the study area. On the other side, some weak point can be recognised in the subjectivity of many steps for evaluating hazard and risk indexes which is, however, intrinsic of the RRA-Kulturisk methodology.

Hence, some points should be corrected and specifically, I would outline the following comments: Comments #1. Page 7885, lines 1-5. Here, it is not clear if water depths and velocities are available from previous studies or the pattern of flow (not water)

velocities have been calculated here or simply fixed without any hydraulic simulations. Please clarify.

Comments#2. Page 7886, lines 6-13. Generally, I can agree with the choice of the return period (300 years) if you want to perform a single scenario analysis but not for a complete risk analysis which MUST consider the frequency of all possible events. As matter of fact, you have a specific risk level also for the other two scenarios. Further, the highest risk levels are due to the low return periods (very frequent events) as many National Flood Management Plans throughout Europe consider. In order to have a more complete risk evaluation, I suggest to carry on the analysis also for the other two scenarios (30 and 100 years of return period).

Comments #3. Page 7897, line 21. I totally disagree with this choice. 0.4 is a very low value for weighing the risk to the people. As matter of fact the people risk maps you considered in the Section 6.1 include the number of fatalities (R2). If there are fatalities I expect a very high level of risk. Now, I think this process shows a too strong subjective approach and arbitrariness of the choices despite the idea of involving experts and stakeholders is reasonable and defendable.

The paper is generally well written despite some parts should be rewritten to be more fluid and clear (in Sections 4.1 and 5, for instance)

Following these considerations, I consider the paper to be published with major revisions after the suggested changes

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 11, 7875, 2014.