EGUsphere, referee comment RC2
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Comment on egusphere-2022-7

Anonymous Referee #2

Referee comment on "More than heavy rain turning into fast-flowing water – a landscape perspective on the 2021 Eifel floods" by Michael Dietze et al., EGUsphere, https://doi.org/10.5194/egusphere-2022-7-RC2, 2022

This is an important, though preliminary, assessment of the non-hydrologic, "landscape", aspects of the July 2015 extreme precipitation event in the Ahrtal and Rhein-Erft region in Germany. The work provides an important complement to purely meteorological and hydrological studies. The investigation is preliminary in the sense that it based on exemplary observations and does not attempt a full systematic recording of landscape effects, but rather tries to identify and describe a few "typical" examples illustrating a couple of process features. In this spirit the publication provides a valuable entry point for more systematic investigations and is certainly a valuable contribution worth publishing.

However, the authors, even in their preliminary approach, might provide some thoughts and further information on at lost two respects:

- Lines 286-289: "To overcome this systematic shortcoming, other systems need to be implemented, systems that are able to collect distributed multivariate data at high temporal resolution and that are not endangered by hostile flood conditions. Instead of just the main channel, such high quality flood related process information should also be available for headwater regions, where the 2021 flood gained its momentum and non-linearity." – While this is without doubt a valid conclusion, the authors should offer at least some preliminary ideas on if and how they believe this could be achieved in terms of feasible methodological and technical approaches. What system might be envisaged? What type of parameters might be recorded? Where do we have technical/organizational solutions? How might these be integrated into next generation models and risk management? – Not a systematic exploration (which would be beyond the scope of the paper), but a couple of ideas.
- Line 195: In terms of past events the authors just mention the 2006 and 2013 events, whose intensities have considerably below the 2021 event. The authors should at least give a reason why they don´t make use the information on the larger events in the Ahrtal in 2010 and particularly 1804 which have been closer to 2021 with respect to intensity, and for which there is quite some documentation. The question on if and how to use, or not to use, this type of historical information (even if the corresponding

report of course don´t reach today´s standards and the environmental and infrastructural was different), should be discussed at least shortly.

In addition, a detail comments concerns statement in lines 18-20. I wonder if nothing beyond “media report” can be cited with respect e.g. to the statement that “hydraulic models underpredicted the actual flood wave...”. The authors might try to list some more solid refeerences for this important statement than just media reports.