

Hydrol. Earth Syst. Sci. Discuss., referee comment RC2
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Comment on hess-2021-387

Anonymous Referee #2

Referee comment on "Compound flood impact forecasting: integrating fluvial and flash flood impact assessments into a unified system" by Josias Láng-Ritter et al., Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2021-387-RC2>, 2021

Review of the paper hess-2021-387 by Ritter et al. submitted for publication in Hydrology and Earth System Sciences

Title: Compound flood impact forecasting: Integrating fluvial and flash flood impact assessments into a unified system

The paper shows how an early warning system should account for the contribution of both fluvial and pluvial flooding when predicting the impacts of flood events. This is of crucial importance when Civil Protections and first responders operationally use these systems for Decision Making before and during an emergency.

The manuscript represents a interesting contribution to scientific progress within the scope of Hydrology and Earth System Sciences by providing new concepts and methods. The scientific approach is well documented and apply an innovatieve methodology that can easily be replied and validated in other sites across Europe. The results are well discussed and are based on previous works well documented and referenced.

The overall approach and methdology applied here and the conclusions of the work are innovatives and the topic is suitable for publication in Hydrology and Earth System Sciences.

Questions and discussion

Uncertainties in the estimation process.

1. How to account for uncertainties deriving also from the integration of flood-type specific forecasts?

Even if it is not the purpose of this paper could you provide some ideas on how to account for the uncertainties resulting from the combination of the two separate approaches (EFAS RRA and ReAFFIRM)?

2. Which are the most relevant sources of uncertainty that can be associated to the ReAFFIRM methodology?

Maybe it is reported in previous papers from the same author but a short discussion should be also reported here.

3. How the uncertainties in the flood estimation can be translated into uncertainties in impact estimation? I think this process is different from flood and flash-flood processes. A short discussion related to this issue should be added.