

## ***Interactive comment on “First evaluation of the damage related to alluvial events in torrential catchments of Campania (southern Italy), based on a historical database” by C . Vennari et al.***

### **Anonymous Referee #2**

Received and published: 27 February 2016

#### Comments to Editor

The paper presents a database of hazardous events occurred in southern Italy. Unfortunately, the definitions of the variables are not clear such that it is difficult to understand the objectives of the study and its reliability.

At first, the title does not match with the contents: no damage assessment is presented in the paper and, anyway, collected data do not allow for a proper damage evaluation.

It is not clear what the authors mean for “alluvial events” (it seems like sometimes it refers to floods or flash floods, other times to rainfalls) and this causes a general confusion on the typology of the collected data, on the meaningfulness of their grouping

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and on the feasibility and the reliability of any hazard and/or damage analysis.

It is neither clear if the authors have verified the data that they have collected. The information provided for each event and the classifications introduced for events and catchments typologies do not allow to implement a damage analysis and, probably neither hydrologic and hydraulic ones. Information are too limited to categorize data from different (and not deducible) typologies of event (grouped in “alluvial events” definition) for further analyses.

Catchment classification considers only the differences in river conditions with respect to the presence of sediments without including variables that influence hydrologic and hydraulic processes, which affected the hazard attributes significantly.

Because of the overall misunderstandings and the lack of explanation of concepts, the paper results are quite confusing and the data collection methodology is unsuitable in hydrologic and hydraulic analyses and completely unusable in damage assessment analyses.

### Comments to Authors

The paper presents a database of hazardous events occurred in southern Italy. Unfortunately, the definitions of the variables are not clear such that it is difficult to understand the objectives of the study and its reliability. The title, moreover, does not match with the contents: if the study “presents a database of hazardous events”, the title should reflect this, instead of introducing a damage assessment which is not presented in the paper and impossible to be carried out because of the coarse data collected (more details ongoing).

The first problem regards the definitions of the adopted terms:

- what does "alluvial events" mean? It seems like sometimes it refers to floods, other times to rainfalls. . . Do you refer to alluvial fan flooding events? Anyway, the adjective “alluvial” is not usually referred to an event, but rather to fans or plains. This improper

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use of the word causes a general confusion on the typology of the collected data, on the meaningfulness of their grouping and on the feasibility and the reliability of any hazard and/or damage analysis.

- which historical documents did you collect and what kind of data did they contain? Did you collect data from available literature and archive data or did you add “historical” documents to the analysis (and, eventually, which documents)? In the first case, it is not clear if you verified the data from the original documents. In the second one, any detail on document collection methodology, on the sources and on the information collected should be necessary.

In page 5 and in Figure 1 you introduce the levels (specific, medium scale and extended) of historical research developed: which kind of analysis do they correspond to? The levels refer to a spatial scale or to a level of detail in the analysis? In either case it lacks the premise about what do you mean with “historical analysis” (see previous sentence).

- why did you distinguish between “flood events in alluvial plain” and “flood events in torrential stream catchment”? A plain and a catchment have different scales: do you refer to floods occurred in different areas of the catchment or in catchments with different features?

A general initial clarification should be needed.

A limit in data collection regards the catchment typologies introduced: classification considers only the differences in river conditions with respect to the presence of sediments without including variables that influence hydrologic and hydraulic processes, which affected the hazard attributes significantly.

Moreover, the information you collected seems to be inhomogeneous:

- again, it is not clear what do you mean with “alluvial” events and, as a consequence, it is not possible to assess if the events in your database can be compared to derive

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statistical conclusions. In general, no information on spatial scale and intensity are provided. In particular, if you refer to flooding events, more information on variables influencing hydrologic and hydraulic processes should be needed (e.g. rainfall events intensities, soil infiltration conditions, level of urbanization. . .).

Because of the overall misunderstandings and the lack of explanation of concepts, the paper results are quite confusing and the data collection methodology is unsuitable in hydrologic and hydraulic analyses and completely unusable in damage assessment analyses.

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