

## ***Interactive comment on “A coupled empirical approach for rainfall and land use correlation to landslide occurrence in the Esino river basin, central Italy” by E. Gioia et al.***

**Anonymous Referee #1**

Received and published: 12 March 2015

The contribution “A coupled approach for rainfall and land use correlation to landslide occurrence in the Esino river basin, central Italy” shows the application of a combined use two different and established approaches to study the correlations among rainfall, vegetation segmentation and landslide occurrence in the Esino River Basin. None of the methods is truly new, however the combination of both is worth to be shown as a natural hazards analysis. The contribution is clear and well written. The outline is clear and the description of the data collection and the methods is good. Presentation of the results is good. The discussion of the results is short. Some more words on the encountered problems and limitations would enhance the quality of the contribution. I

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would recommend publishing the paper after minor revisions.

General comments:

- a) Considering the detailed description of the geological framework, a schematic geological map of the study area should be shown in a figure.
- b) Authors sustain that the terrigenous sediments dominate in the hilly central Marchean ridge area but this information is missed when they divide the basin in two sections. Here the valley and low hills are dominated by post-orogenic sediments.
- c) Data plotted in Figure 2 have been used to validate equation 2. The results are good but only the ID data in the valley and low hills of the 2014 event fall within the cloud in a position comparable to those of the historical data. How do you explain the differences between the historical data and the other groupings (2013 valley and low hills, 2013 mountains, 2014 mountains)?

Specific comments:

P1558, line 6: please replace “carried out” with “evaluated”;

P1558, line 24 to P1559 line 1: please rephrase the sentence;

P1558, line 27: please replace “exist” with “are available”;

P1560, line 4: please replace “bands” with “areas”;

P1561, line 21: please add “in hours” after “duration”.

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 3, 1557, 2015.

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