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Hydrology and Earth System Sciences Discussions

Interactive comment on "Factors affecting the runoff coefficient" *by* G. Del Giudice et al.

Anonymous Referee #1

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The manuscript is interesting and easy to read but, in my opinion, the content does not fit well with HEES Journal.

The topic appears to be oriented to practical hydrology and the methodology developed in the manuscript is too simple with lack of innovative contribution.

In my opinion the rational formula and the runoff coefficient for flood peak discharge estimation should be overcome by more advanced methods also in ungauged condition.

The same opinion is valid for the SCS-CN approach for small basins.

In a small and ungauged basin I see that the following approach, that is already dated, is more appropriate:

1) Synthetic Hyetograph estimation from rainfall observation (or using regional maps); 2) Rainfall excess estimation using SCS-CN (sic!) or more advanced approaches; 3) Rainfall-runoff transformation using geomorphological unit hydrographs (GIUH, WFIUH) that do not need runoff observations;

so I do not see any reasons to apply the rational formula or better to further investigate on it.

Concerning the submitted manuscript other to the previous general comment the following are also important:

1) there are so many source of uncertainty in the parameters included in the various empirical formulas used in the paper (Tc among others) that the conclusion becomes difficult to be supported; 2) the data set is relatively poor considering the aim of the paper; 3) the methodology is really simple more appropriate for a more technical Journal; 4) the manuscript includes 22 references....8 are in Italian...1 in German...3 are technical reports...the other ones are dated. Probably in a Journal like HESS the reader expect to see something more.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 9, 4919, 2012.