

Interactive comment on “Runoff formation from plot, field, to small catchment with shallow groundwater table and dense drainage system in agricultural North Huaihe River Plain, China” by S. Han et al.

Anonymous Referee #2

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This manuscript presents and interprets a nice runoff dataset collected at different scales, from plot to small catchment, in a humid and densely drained agricultural area. I believe that this manuscript will eventually be publishable at HESS. Nevertheless, I would suggest the authors provide deeper insight into the scaling behavior of runoff generation in this area. The results show that the event runoff coefficients are highest at the medium scale, while lowest at the plot scale. This is not completely consistent with the previous studies which suggested the decreasing of runoff coefficient with

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area (e.g., Cerdan et al., 2004). The authors need to better articulate the underlying processes. Also, the authors need to provide more details on the runoff volume measurement, i.e., starting/ending of a rainfall event and subsequent runoff event. This will very often affect the relative contribution of subsurface runoff. In Figure 8, the runoff difference between plot and field is used to roughly estimate the subsurface runoff at the field scale, and the same for the small catchment scale. Could the authors directly separate the baseflow (here mainly due to subsurface runoff) from the observed hydrographs, and see if the same conclusions can be reached? Moreover, the writing could be significantly improved. The examples include, but not limited to, the following: 1. P4236, Line 8-9. Have the surface and subsurface runoff been collected separately or together as total runoff? Rewording is needed here for clarification; otherwise one has to go to Section 2 to find out. 2. Past and present tenses have been used in a mixed way. For example, P4236, Line 17-18. 3. P4238, Line 19-20. What do “field” and “fields” mean here? Please use different words. “field”, “slope” and “hillslope” (e.g. Figure 3) all have been used to denote the medium scale in this paper, which is somehow confusing. Please be consistent. 4. P4238, Line 25-27. This sentence does not read well. Please rephrase.

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