

Interactive comment on “Modeling relationship between runoff and soil properties in dry-farming lands, NW Iran” by A. R. Vaezi et al.

Anonymous Referee #3

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In this paper, the author claimed that runoff was directly affected by soil properties such as permeability, sand, coarse sand, silt, organic matter, lime, and aggregate stability, etc.. Based on this knowledge, the author developed the statistic regression relationship between soil physical and chemical properties and runoff to explain the differences in runoff generation over different plots under same rainfall condition. There are two great mistakes in this paper that prevent it to be published in this journal.

Firstly, the soil water regime (soil water content, water infiltration capacity), vegetation cover and rainfall properties are the main factors to influence the surface runoff generation. Indeed, soil physical and chemical properties have great influence on soil water regime and dynamics, but don't directly affect the runoff processes. To try to develop

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the statistic runoff generation model based on the relationship between soil physical and chemical properties and runoff was failed in theoretical foundation.

Secondly, runoff generation in semiarid regions is dominated by the infiltration-excess process; however, the rainfall events and corresponding soil moisture dynamics were not discussed in detail. The initial infiltration rate for different measuring plots was not explained and only the relationship of final infiltration rate with runoff was discussed. It is lack to present the relationship between the infiltration rate and soil properties and the explanation of the results obtained from runoff model with soil properties was not strongly supported by the infiltration processes.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 7, 2577, 2010.

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