

## ***Interactive comment on “Prediction of geomorphologic parameters of catchment without GIS to estimate runoff using GIUH model” by P. Keshtkaran and T. Sabzevari***

**Anonymous Referee #1**

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General comments: Prediction in ungauged catchments has great importance, and the geomorphologic instantaneous unit hydrograph (GIUH) is a powerful tool in such ungauged catchments on the procedure of runoff concentration. In this paper, the authors presented an idea to compute geomorphologic parameter (GP) which be used in GIUH without the need of GIS or DEM. Some regression equations were presented on the basis of nine natural catchments in different countries and evaluated in the other three different catchments. And then, the sensitivity of different GP on direct runoff hydrograph was analyzed. Finally, the effects of GIUH by means of GP from regression equations were examined. The method in this paper is interesting.

Specific comments: In general, high resolution DEM could be obtained conveniently

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and the GP could be calculated easily by means of some GIS software (for example the 'River Tools'). The purpose of this paper is to calculate GP without DEM, how could we obtain the catchment area (A) and the length of main stream (L)? From Fig.9 and Fig. 10 we could find that in the four events, calculated peak flow was lower than observed peak flow for three events. Is this mean that some other factors affected the GIUH? Page 6 Line 133-134: What do the characters "a" and "b" denote? Page 11 Line 219-221: When the Eq.(12) indicates it can be applied in small catchment which is less than 200km<sup>2</sup> ; how can we know it can be used in those watersheds beneath 600 km<sup>2</sup> ?

Technical corrections: Page 19 Fig.10 (a): The legend was omitted.

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