

Interactive comment on “An algorithm for delineating and extracting hillslopes and hillslope width functions from gridded elevation data” by P. Noel et al.

P. Noel et al.

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1. This paper aims at presenting a method for the delineation of hillslopes and the computation of hillslope width functions from topographic data. There are several edits/comments I could make, but the main one is that the method proposed is not presented in sufficient details. The paper lacks references to all the body of literature on the subject: hillslope detection has been discussed quite a bit in the literature, but no comparison is done in this paper. Tarboton's Dinf method and Orlandini's papers are referenced, but not in the way I would have expected. Tarboton's 1997 papers de-

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scribes in a very detailed way the Dinf method, why is needed, etc. and Orlandini's papers do the same, but these methods are not compared here to the one proposed. The only method I see mentioned is the steepest descent, which is well known to fail in extracting hillslope paths appropriately. There may be good ideas in this paper, but there isn't enough information for assessing the quality of the method proposed. Substantial work in introduction, reference to previously proposed methods, description of what is new in the method proposed and comparison with existing methods should be done before this paper could be considered for publication on HESS.

Response:

The literature being referred to by the reviewer is focused on the problem of watershed delineation, which is the starting point for the hillslope extraction method presented in our work. This has been clarified in the revised manuscript (see the revision of section 2.1 in response to Comment 6 of Reviewer 1). We have, in addition, made the Abstract clearer and added references on the specific problem of hillslope delineation, in the Introduction and in the Conclusions, clarifying that these are still evolving methodologies and that a comparison of different approaches would be an important topic for future study.

Please also note the supplement to this comment:

<http://www.hydrol-earth-syst-sci-discuss.net/8/C5406/2011/hessd-8-C5406-2011-supplement.pdf>

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