Earth **Surface**
Dynamics
Discussions

ESurfD

Interactive
comment

Interactive comment on "Computing water flow through complex landscapes, Part 3: Fill-Spill-Merge: Flow routing in depression hierarchies" *by* Richard Barnes et al.

Anonymous Referee #1

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In this paper, Barnes et al present the details of the Flow-Spill-Merge algorithm (FSM) already introduced in prior papers. I am not an expert in C++ so I can't comment on the code. I think the paper is well-written and needs only minor adjustments:

figure 1: - I suggest to number the depressions in the figure to make it easier for the reader to follow the explanations

lines 70-83: I think that if the authors refer to the subfigures it will be easier to read. I found that fig.2e has the elements I needed to understand the text.

line 78: when #0 in mentioned in fig.2, I had a bit of trouble finding it in the figure (it's a bit hidden under "Ocean", and the purple color of the square in 2a is a bit dark)

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Discussion paper

line 93: figure 2e

line 100: figure 2a

line 173: the I was a bit confused by the "water than they can hold spill" here. Is it "water than they can hold will spill"?

line 382: maybe insert a citation for GRASS GIS here? (Neteler et al 2012)

figures 6 and 7: Have you thought about using a divergent colorscale here? Since you are showing positive and negative differences?

- Is the drainage network from both algorithms compared here are identical, differing only at the depressions? I was curious to see the drainage.

Interactive comment on Earth Surf. Dynam. Discuss., https://doi.org/10.5194/esurf-2020-31, 2020.