



EGUsphere, referee comment RC3
<https://doi.org/10.5194/egusphere-2022-605-RC3>, 2022
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Comment on egusphere-2022-605

Anonymous Referee #3

Referee comment on "Self-organization of channels and hillslopes in models of fluvial landform evolution and its potential for solving scaling issues" by Stefan Hergarten and Alexa Pietrek, EGU sphere, <https://doi.org/10.5194/egusphere-2022-605-RC3>, 2022

This is an interesting manuscript which introduces a new idea of implementing landscape evolution simulations. I have found that many of my technical concerns are already commented by other referees.. and so try to add comments which were not mentioned yet. My major concern is that the focus of the manuscript is somewhat distracting. I understand the value of new modeling framework, but I am uncertain how this can lead to any new findings or scientific advances in self-organization processes. In particular, the OCN contents in section 3 are not well harmonized with the rest of the manuscript. I suggest in the revision that authors decide the focus of this manuscript sharply, and restructure the writing. Minor comments follow.

L25: If authors search for more literature, there is a much wider range of concavity index found in nature.

L35-39: This part needs to be rewritten in a much comprehensive manner.

L40: the linear diffusion equation would need a citation

Eq(3): This is a key governing equation in this study, and it requires much stronger justification. It also requires relevant literature.

Figure 1: I was very confused when I first looked at the figure. I guess what authors mean on the x-axis is the 'channel forming area', not 'catchment area'?