

Interactive comment on “Assessment of structural sediment connectivity within catchments: insights from graph theory” by Étienne Cossart and Mathieu Fressard

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Received and published: 22 November 2016

Dear Mr. Cossart and Fressard,

thank you for the extensive reply to my comment. Your reply addresses many of my questions, which were mainly regarding the methodology. Based on your comments, I see the specific contribution of the paper more clearly. This is especially based your statement that you aim to measure as " an influence on the (dis)organization of the whole system". Would you agree that your indices can be considered to reproduce the spatial (dis)organization of slopes in the whole system? Based on your statements I agree that it might be feasible to expanded the proposed indices (in future) into a measure of connectivity (in the sense of sediment or water fluxes through the catchment).

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With this regard, I would really greatly acknowledge this paper as a starting point of discussion for how functional and structural connectivity can be merged in future (as you mention in your reply: doing it in practice would far exceed the scope of this article). This could be of great value for understanding geomorphic response of connected systems, both to natural and human disturbance. I think just a brief mentioning in the discussion, as you proposed, would be a good place for it.

Last, my only remaining question is if partial (dis) connection (i.e., the case that a geomorphic barriers hinders/slows down connectivity, but does not fully interrupt it) can be considered in the framework. Respectively, if partial (dis) connection is a meaningful concept in the structural approach that you propose. I know that also this might be beyond the scope of this paper, but I would be interested in your opinion.

I accept your objection to not revise the abstract in a major way, but your comment to add a closing sentence as you propose would help me as a reader.

Best regards Rafael Schmitt

Interactive comment on Earth Surf. Dynam. Discuss., doi:10.5194/esurf-2016-55, 2016.

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