

Interactive comment on “Constraining the Stream Power Law: a novel approach combining a Landscape Evolution Model and an inversion method” by T. Croissant and J. Braun

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This is an interesting approach to constraining simulation model parameters by fitting to assumed steady-state landscapes. It is also somewhat sobering about the potential for evaluating and "tuning" landform evolution models as applied to specific landscapes. Essentially the message is that models with several parameters (even just two or three) are very difficult to estimate parameters, even when used to estimate parameters for a model generated with known parameters which is fitted blindly. My take-home message is the difficulty of extracting process information from landscape form unless a lot is known to constrain the appropriate model, the physical properties of the landscape

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and microclimate, and its historical evolution. It is a very useful study.

A few small comments:

Line 10: m and n could also depend on the erosional mechanism (plucking, dissolution, weathering and detachment, as a surrogate for abrasion, etc.). Line 13 "known" should be "know" Figure 5: Suggest using the same elevation-coloring scheme used in earlier figures. Suggest "fracturing" rather than "fracturation", or perhaps degree of fracturing, or intensity of fracturing.

Interactive comment on Earth Surf. Dynam. Discuss., 1, 891, 2013.

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