

Interactive comment on “Rivers as linear elements in landform evolution models” by Stefan Hergarten

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Dear author,

A point of clarification: Paragraph 23 of Perron et al. (2008) reads,

The factor $w_{i,j}/\delta$ in equation (15) (where δ is the grid spacing; in the present study, $\delta = \Delta x = \Delta y$ in all cases), a modification due to Howard (1994a), accounts for the fact that stream channels have a finite width (equation (11)) that is narrower than the grid spacing. Neglecting this factor would assume implicitly that channels have a width δ , and the model solutions would then be resolution-dependent. In this study, we assume for simplicity that $k_4 = 1$ m and $b = 0$ in equation (11) [$w = k_4 Q_w^b$], noting that future studies intending to apply this model to a specific field site will need to

calibrate the channel width function. The values of k_4 and b do affect the form of the model topography, but using typical measured values that lead to spatially variable channel width would not qualitatively change the results presented here.

So the analysis in that paper uses an approach similar to that of Howard (1994) and does consider the physical meaning of the channel width, even if the numerical experiments assume it is spatially uniform!

Best regards,

Taylor Perron

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Discussion paper

