



## *Supplement of*

# **Reconstructing landscapes: an adjoint model of the stream power and diffusion erosion equation**

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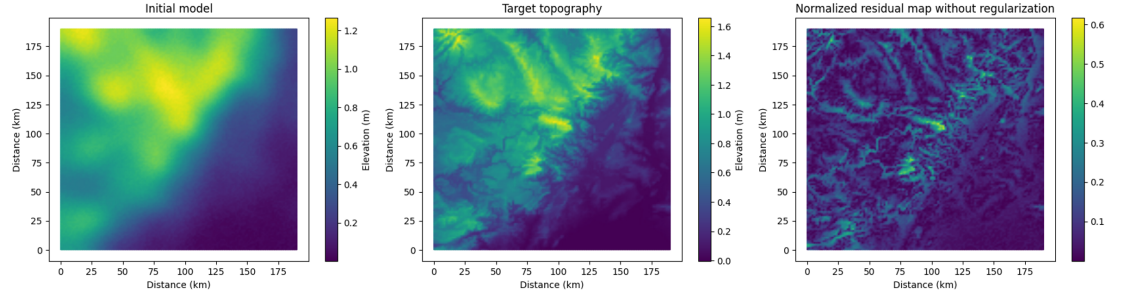


Figure S1: Examples chosen to illustrate the effect of Total Variation coefficient  $\alpha$  and edge preserving coefficient  $k$  (see Table S1). Left: smoothed initial topography; Middle: target (true) topography; Right: residual without any regularization

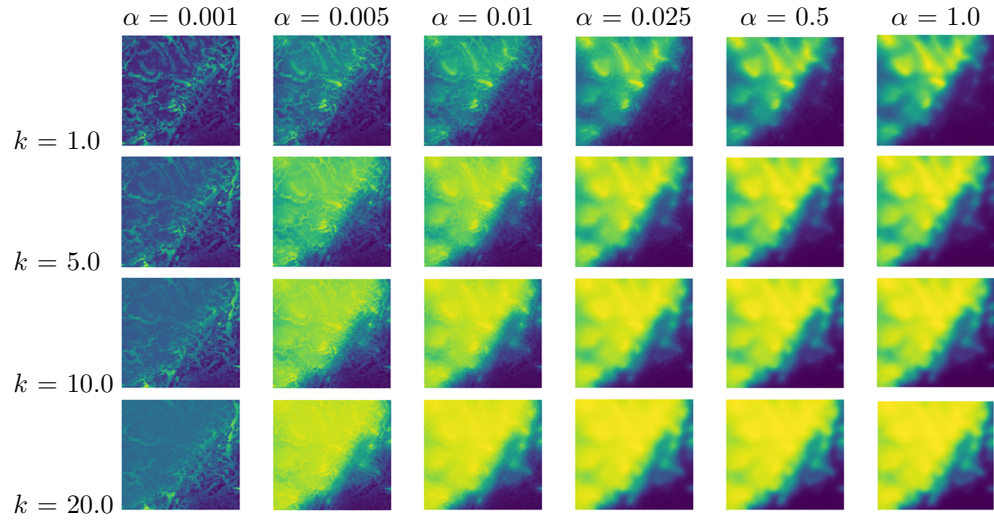


Table S1: Effect of Total Variation coefficient  $\alpha$  and edge preserving coefficient  $k$  on the residual map between a smoothed initial topography and the actual one (Figure S1). Note that increasing  $\alpha$  removes short wavelength variations, while increasing  $k$  tends to gather areas of similar altitudes together. During the inversion process, the yellow areas will be smoothed while the blue ones will be preserved.