

Interactive comment on “Development of a statistical tool for the estimation of riverbank erosion probability” by E. A. Varouchakis et al.

Anonymous Referee #1

Received and published: 16 July 2015

The authors present a case study in which they combine the existing BSTEM model with existing regression models. As I am not familiar with regression techniques, I recommend another reviewer after major revision. My own area of expertise regards bank erosion, and here I have major concerns that lead me to recommending major revision. The paper does not show any validation of the method by showing a comparison between predicted bank erosion and observed bank erosion. No maps of erosion predictions are given. The paper also does not provide any information about the values of the input data for BSTEM (flow parameters, bank material parameters, bank vegetation parameters, bank protection parameters). That makes the work irreproducible and unverifiable. Three out of the five figures show predictions for three different regression methods without possibility of comparison with data or inter-comparison. The main cor-

C321

relation found, i.e. the correlation between new bank erosion and recent bank erosion (= bank angle), is not much more than prediction by extrapolating ongoing trends.

The introduction mixes the problems of surficial soil erosion with bank erosion, and fails to list the beneficial effects of bank erosion for fluvial ecosystems.

A few minor points: (1) Bridge (2009) is referenced but the list of references lists Bridge (2003); (2) At several locations: "the vulnerable to erosion locations" must be "the locations vulnerable to erosion" (similarly for areas vulnerable to erosion); (3) Page 4, line 27: "principals" must be "principles"; (4) Page 8, lines 17-18: This sentence is unintelligible; please rephrase.

Interactive comment on SOIL Discuss., 2, 647, 2015.