

**Review of the revised manuscript “River incision,  $^{10}\text{Be}$  production and transport in a source-to-sink sediment system (Var catchment, SW Alps)”**

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The manuscript is greatly improved in the presentation of the models, model variables, and results. This manuscript clearly demonstrated the potential pitfalls of interpreting the inferred erosion rate from cosmogenic nuclide concentration of marine sediment. I recommend accept this manuscript <subject to technical corrections> or with some very minor revisions which I listed below.

A minor general point about the terminology of different erosion rates. Throughout the paper, there are four kinds of erosion rate, that are, 1) erosion rate inferred from measured cosmogenic concentration either of river sediment or marine sediment (the data presented in Figure 2); 2) direct LEM model results (line 256); 3) the modeled cosmogenic concentration-inferred erosion rate assuming steady state erosion, i.e., Eqn. 10 and Eqn. 11 for “in-situ” sediment (from the concentration of  $N_{\text{ex}}$ ); and, for 4) marine sediment (from the concentration of the “ $^{10}\text{Be}_{\text{MS}}$ ”). In the text, I can see the authors trying to use “actual” or “real” to distinguish them but these two words can be ambiguous. Following the authors' narrative, one way I can think about is model- $^{10}\text{Be}_{\text{MS}}$ -inferred, direct model results, or measured  $^{10}\text{Be}_{\text{MS}}$ -inferred to distinguish the measured concentration against modeled concentration. The authors can also stick to the simple ones like “in-situ erosion rate”, or “deep basin”/ “canyon”-inferred erosion rate as the authors used these terms in Figure 6 top right panel. To do so, one or two additional clarifying sentences inserted into somewhere around line 255 to Line 257 will be proper. And make sure the terminology is used consistently throughout the paper.

Otherwise, the three places below should be corrected.

Figure 3 captions, first line: “contour” → “outline”

Line 216: in between “surface” and “is”, misses a comma

Line 252: “such as” → “such that”