

I was satisfied by the authors answers to my comments and how they amended the text. I suggest some little additional modifications authors must feel free to consider or not.

We appreciate your insightful second review. Your constructive comments were valuable in enhancing our manuscript during the review process.

Line 18 : I suggest replacing 'Meyer-Peter Müller versus Recking approach' by 'Meyer-Peter Müller and Recking'

Suggestion accepted.

Line 20 : replace 'the first equation is a classical' by 'the first equation is derived from a classical'

Suggestion accepted.

Line 21 : replace 'based on bedload data acquired from active mountain streams under steeper conditions' by 'based on a bedload field data set comprising active mountain streams under steeper conditions'

Suggestion accepted.

Line 138 : replace 'all available equations' by 'all equations'

Suggestion accepted.

Line 140 : suggestion replace: 'Despite this limitation, these equations were adjusted to represent the average bedload flux under the same boundary conditions, proving to be a powerful tool for estimating sediment flux over long-time scales. Therefore, the published and thus available bedload equations potentially serve as a suitable tool for our study, which focuses on relative changes in sediment transport capacity between engineered and non-engineered conditions in the Guerbe River.' -> 'Despite this limitation, these equations were adjusted to represent the average bedload flux under various boundary conditions, and, therefore, remains relevant tools when used in a relative manner for estimating changes in sediment transport capacity between engineered and non-engineered conditions in the Guerbe River.'

Suggestion accepted.

Line 132 and 145 : remove 'two different equations representing the end members of a large panel of' line 132 and line 145 replace 'Among the various bedload equations that have been published in the scientific literature, two equations turn out to be most suitable for our basin. These are, as argued for below, the Meyer-Peter and Müller (1948) and Recking (2013) formula.' by 'Among the various bedload equations that have been published in the scientific literature, we chose to consider the Meyer-Peter and Müller (1948) and Recking (2013) equations, as they are representative for the two families of equations derived respectively from flume and field data»

Suggestion accepted.

Line 165 : 'occurrence of a near uniform flow'.

Suggestion accepted.

Line 174-178 : you already mentioned that. remove this sentence

Suggestion accepted.

Line 198 : remove 'better'

Suggestion accepted.

Line 210 : suggestion 'For both the MPM and Recking approaches we computed the dimensionless sediment bedload flux, with the Einstein parameter (Φ) (Einstein, 1950).'

Suggestion accepted.

Line 373 : what do you mean by 'and is equivalent to a power exponent,' ? It produces results similar as when applying a power exponent ?

Yes, our ratio approach yields comparable results to those obtained by applying a power exponent ranging between 0.9 to 0.95.

Line 414 replace 'data on grain sizes of sedimentary particles on the riverbed surface' by "data on bed surface grain sizes"

Suggestion accepted.

Figure 6, 7, 8: In mountain streams, unlike alluvial rivers, transport depends on the availability of material which is not always the case. What you compute is more representative of a transport capacity. This explains why you compute greater transport at the apex than downstream, which questions on the continuity of transport along the profile. This does not change your results, but should be more clearly mentioned. Besides, Line 522 you write 'The application of two different approaches to calculate the bedload transport capacity'...

Thank you for your suggestion. We acknowledge that the assumption regarding material availability was not explicitly stated in the text. To address this, we inserted the following sentence in lines 195-197: "Furthermore, it is important to note that in mountain streams, the amount of transported material is influenced by its availability. In this study, we clarify that bedload flux calculations are interpreted as the transport capacity of the material under specified boundary conditions."

The scarcity of available material during a sediment transport event results in a change in the stream slope, leading to a condition of reduced transport capacity. In engineered conditions, the slope of the reaches between the dams exhibits significant fluctuations closely associated with material availability (e.g. between the apex in site 7 and downstream sites). This mechanism is detailed in Section 5.2, referred to as the regulation of sediment transport.

Line 667 after 'Both equations resulted in similar predictions regarding mean annual bedload fluxes for the currently engineered state. In contrast, models...' Suggestion : add 'both models also predicts higher transport in the non engineered state. However, models...'

Suggestion accepted.