

We would like to thank both referees for the thorough review of the revised manuscript.

Response to Referee 1

Thank you for accepting the manuscript for publication.

Response to Referee 2

Thank you for your positive assessment of our responses and the updated content of the manuscript. Thanks to your thorough review of the uploaded manuscript and by verifying the raised textual issues, we found that a mistake had happened in the final preparation of the manuscript: Instead of switching the text color of the modified parts that were marked by colors in the "Author's track-changes file" back to black, the changes were completely removed from the final manuscript. This, unfortunately, remained unnoticed by us by the time we uploaded the manuscript, and led to the broken sentences that you remarked. We are very sorry for this error and the inconvenience that it caused.

We cross-checked the now corrected manuscript with the textual suggestions that you made and found that most of them were directly accounted for by this correction. All other suggestions were picked up and changed accordingly in the newly revised manuscript. These new changes are again marked in orange in the "Author's track-changes file".

Minor

- "porosity predictors" ... "require only very limited information about the packing" I suggest carefully reformulating the sentence, as a porosity predictor having the packing as an input thus does not predict anything at all, c.f. eq. 1 and 2 showing the unique relation between porosity and packing density.

This part of the introduction refers to a specific type of porosity predictors, namely empirical porosity predictors. As the text states, they rely on a few statistical descriptors of the grain properties as the sole input. We rephrased this sentence to mention information about the "packed sediment" instead of the "packing" to clarify this point.

- There seems to be a mistake in equation 3, it should be $e = V_p/V_s = (1 - n)/n$

We carefully rechecked this equation for the void ratio and found no error in the original formulation $e = V_p/V_s = n/(1 - n)$ in the manuscript. E.g., for a hypothetical packing that only consists of solid grains ($V_p = 0, V_s = V$), the void ratio as well as porosity are 0, i.e., $e = n = 0$. This is correctly obtained by $e = n/(1 - n)$, i.e., the equation 3 in the manuscript.