Erratum

How Large Immobile Sediments in Gravel Bed Rivers Impact Sediment Transport and Bed Morphology (Journal of Hydraulic Engineering DOI: 10.1061/(ASCE)HY.1943-7900.0001842)

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Erratum for "How Large Immobile Sediments in Gravel Bed Rivers Impact Sediment Transport and Bed Morphology" by C. W. McKie, C. Juez, B. D. Plumb, W. K. Annable, and M. J. Franca

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In the original paper, the term "particle density" was erroneously changed during the review process to "particle spacing."

Therefore, all through the paper the text errors should be revised by replacing "spacing" with "density" or "densities." Revised versions of Figs. 4–8 and 10 are also provided herein.

The correct use of the word "spacing" only remains in following four lines in the text:

- First paragraph of "Bedload Transport Data" section: "The sediment transport ratio of each case shows that increasing the **spacing** between the large immobile particles . . . "
- Fourth paragraph of "Holistic Interpretation of the Results" section: "Alternatively, **spacing** the clusters closer together resulted in the flow patterns interfering with each other and reducing the energy of the turbulence cells."
- Fifth paragraph of "Holistic Interpretation of the Results" section: "(2) at a narrow range of large immobile particle **spacings**, flow structures build upon each other and amplify their erosive forces."
- Last paragraph of "Conclusions" section: "(2) at a narrow range of large immobile particle **spacings**, flow structures build upon each other and amplify their erosive forces."

The updated version of the paper may be read with this correction. Inconvenience is regretted.

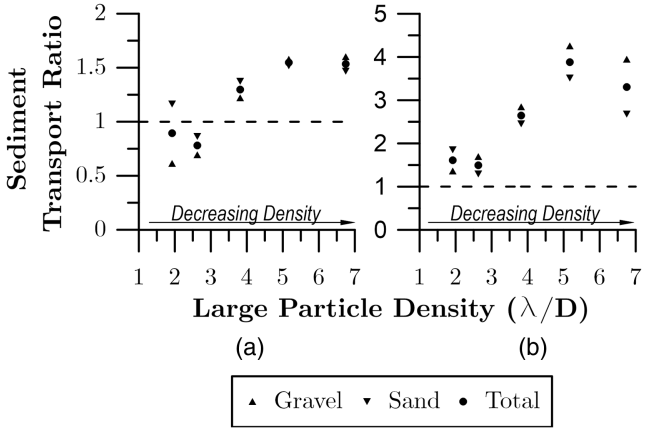

Fig. 4. Sediment transport ratio for sediment transported over the entire hydrograph in each test case. The horizontal dashed lines indicate a value in which sediment into the system is equal to sediment leaving the system. Additionally, the coarse material (gravel) and the fine material (sand) are plotted separately to depict the sediment transport ratio of each of these fractions individually: (a) sediment transported during the entire hydrograph; and (b) transported sediment during the 1-min peak discharge step only.

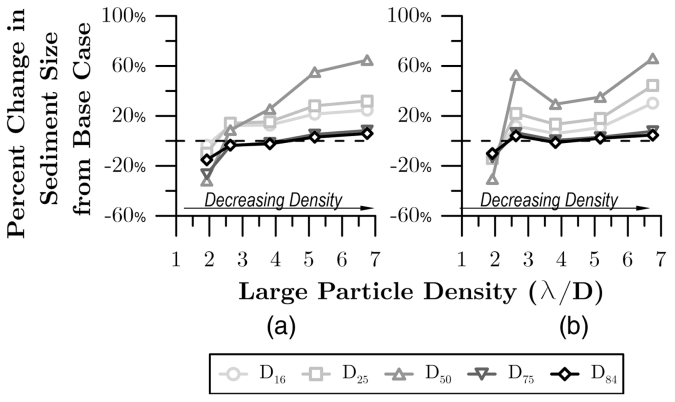

Fig. 5. Change in the sediment size of the transported material presented as a percent change in size fractions from the base case, $100 \times (D_i - D_{i,\text{base}})/D_{i,\text{base}}$ (i.e., if D_{50} is 1 mm for the base case and 2 mm for the test case, this would be represented on the plot as 100%). The horizontal dashed line represents no change from the base case: (a) all sediment collected during the entire hydrograph; and (b) only sediment collected during the 1-min peak discharge step only.

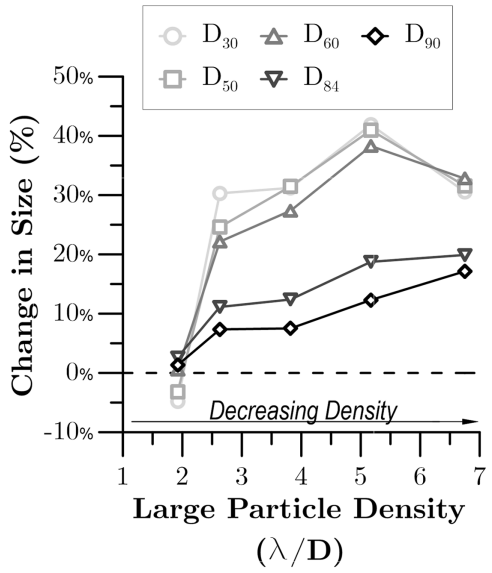

Fig. 6. Increase in bed material size fractions found after the hydrograph with decreasing density, represented as a percent change from the results of the base case, $100 \times (D_i - D_{i,\text{base}})/\text{D}_{i,base}$. The horizontal dashed line represents no change from the base case value.

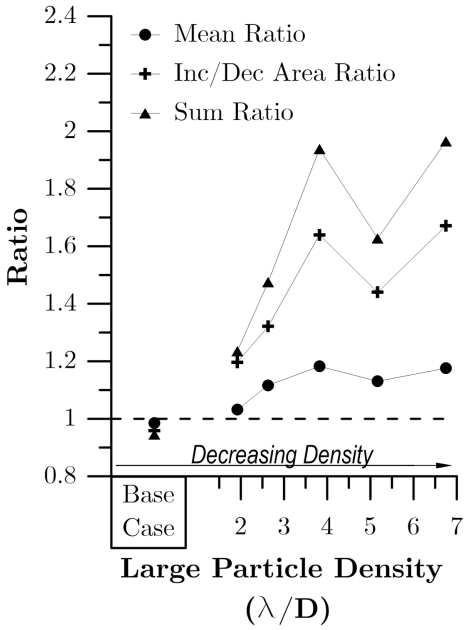

Fig. 8. Results of the particle clustering analysis, displaying the mean ratio (circles), the increasing/decreasing area ratio (crosses), and the sum ratio (triangles). The horizontal dashed line represents values at which the particle clustering is equivalent between the beginning and completion of each hydrograph.

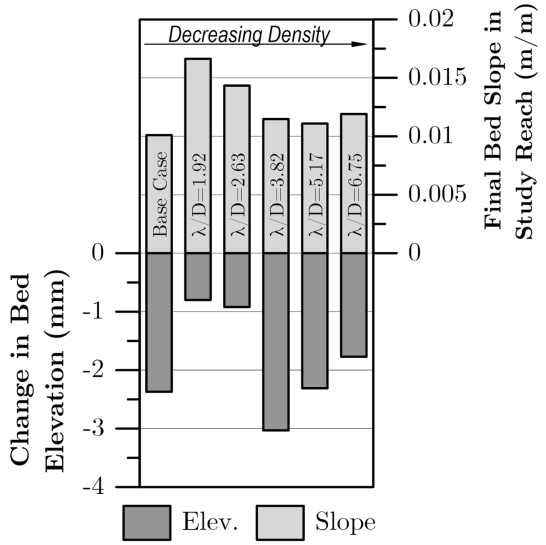

Fig. 7. Change in bed elevation (dark gray) at the end of the experiment with respect to the prehydrograph/initial situation ($\text{Elevation}_{\text{final}} - \text{Elevation}_{\text{initial}}$) and the final bed slope at the end of the experiment (light gray).

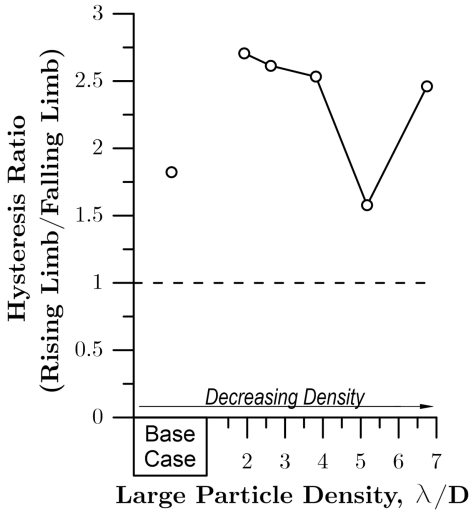

Fig. 10. Hysteresis ratio versus large immobile particle density. The horizontal dashed line represents the conditions in which an equivalent amount of sediment is transported on each limb. The base case has been plotted on the left for comparison to the test cases.