Dear Dr. Galy,

Thank you very much for your previous letter and the publication decision for the article. My co-authors and I have made the few technical corrections you recommended in order to publish the article. I would like to apologize for the delay for sending back the corrections. The re-read from an English native took a little more time than expected, due to a long travel from France back to Australia. The changes made in the manuscript are detailed in green in the revised manuscript. My co-authors and I hope those changes will make the manuscript more suitable for publication. Answers to the associate editor's comments appear in bold.

Sincerely,
Laurent Fouinat


**Associate Editor Decision: Publish subject to technical corrections** (07 Feb 2017)
by Valier Galy

Comments to the Author:

Dear Dr. Fouinat,

thank you for submitting a revised version of your manuscript. I have now had a chance to read it carefully and I am pleased to recommend its publication subject to technical corrections. Overall you did a very good job at broadening the scope the manuscript and I am sure it will make it much more appealing to the broad readership of Earth Surface Dynamics. I am aware that neither you nor your co-authors are native English speakers and – being myself in that position - I know how difficult it is to eliminate syntax errors. That said, before the manuscript can be published, please have it checked and edited by a native English speaker, in particular the sections that were largely rewritten during the revision process. A handful of minor comments also follow for your consideration.


L72: please define voxel as the average reader of Earth Surface Dynamics probably not familiar with this term.

**We added in the revised text (l.72) "(i.e. volumetric pixel)" after the word voxel in order to define the term used in the study.**


L209-210: it would be easy to accurately measure the actual volume, thereby removing the assumption on its density.

**We agree with your comment. The simpler and more accurate way to calculate the volume of the gravel piece, is to measure the weight of water displaced when the sample is fully immersed. When this relationship is applied, we can measure a weight of 79.31g of water and which is equivalent to 79.31 ml, also equal to a volume of 79 310 mm³. This volume is more accurately measured, and changes the difference of volume calculated numerically. Before there was a 15% volume overestimation from the numerical counting, considering the new value, this difference decreases to 11.6%.**

L227-229: statistically speaking one data point can be considered to be an outlier, with the remaining data points distributed around the 1:1 line. As it is your correlation is heavily weighted towards that one outlier.

**Thank you for this comment on the outlier point present in the linear relationship. We tested the same relationship without this outlier point, in order to estimate the weight of this point. The result on the seven other points exhibit a relationship of (r=0.78, n=7; p-value=0.0038) which is still satisfactory and close to the previous correlation. We added this information into the revised manuscript (l-226-227).**