

***Interactive comment on “Effects of
Micro-Arrangement of Solid Particles on PCE
Migration and Its Remediation in Porous Media”
by Ming Wu et al.***

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REVISION Special Issue Article: HESS-2017-493 Title: Effects of Micro-Arrangement of Solid Particles on PCE Migration and Its Remediation in Porous Media

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OUTLINE AND GENERAL APPRECIATION This study presents the results of a contaminant transport simulation based on the migration of DNAPL through an idealized porous media aquifer, which aimed to explore the control of porous media microstruc-

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ture (micro arrangement of particles) over the migration and remediation of DNAPL at the macroscopic scale. The manuscript is well organized and written. Figures and tables are of good quality and are all necessary. The paper merits publication in the HESS, with a minor revision focused on issues of field validation and scale. All the conceptual and mathematical frameworks are correct, but to my view results cannot be extrapolated to real world conditions because no field validation is provided. Besides, heterogeneity of natural aquifers largely exceeds the simulation scale (100 x 25 x 25 m). So, although the effect of scale is discussed in the paper, to my view the results presented by the authors are valid solely for the heterogeneity conditions generated within the simulation, which means they are not directly transposed to larger field scales (see for example Pacheco, 2013 and Pacheco et al., 2015). In the discussion section of the revised manuscript, the authors should explain how they think their results can become representative at the aquifer scale, where heterogeneity and anisotropy are frequent, and how they couple with published results for natural systems. In fact, I already reviewed various manuscripts of this author and I think never saw this recommendation attended.

REFERENCES

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Pacheco, F.A.L., Landim, P.M.B., & Szocs, T. (2015). Bridging hydraulic diffusivity from aquifer to particles size scale: A study on loessy sediments from SW Hungary. *Hydrological Sciences Journal*, v. 60(2), p. 269-284.

RECOMMENDATION Minor revision 21 September 2017 Fernando A.L. Pacheco

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