

Interactive comment on “Percolation properties of 3-D multiscale pore networks: how connectivity controls soil filtration processes” by E. M. A. Perrier et al.

Anonymous Referee #2

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General Comment

An interesting and good paper as generating soil structures with given pore size distributions and connectivity is useful for many avenues of research including assessing the effect of biological and chemical processes without having to depend on experimental or CT derived data. The work presented is a natural extension of the 2009 paper (Multiscale percolation properties of a fractal pore network in Geoderma) and is applied to filtration. The topic is relevant for the journal.

Specific Comments

Figures need more explanation. They only make sense when reading the Geoderma C1881

2009 paper and it would be better if from the text and more detailed legends there is sufficient information to access information presented in the figures by readers that did not have a multifractal background. These also need labelling and captions for each figure within a figure.

“An algorithm has been developed to better handle percolation in large 3-D fractal structures (accounting for the presence of large clusters of connected voxels) and has been validated by comparison with classical algorithms.

Can this algorithm be presented (at least in a summary style) and results of comparison of classical methods presented. What are the novel aspects of this algorithm and how does it differ from classical approaches?

A reference to the techniques used for measuring pore size distribution should be provided.

Interactive comment on Biogeosciences Discuss., 7, 2997, 2010.