

Interactive comment on “Macropore flow at the field scale: predictive performance of empirical models and X-ray CT analyzed macropore characteristics” by M. Naveed et al.

Anonymous Referee #1

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Technically the work is solid. I am not sure about the novelty of the work. What is new? It was amply demonstrated that macropore flow cannot be predicted from soil basic properties. The authors are far from being first to demonstrate this. Macroporosity, macropore mean diameter, minimum connected macroporosity and macropore local connectivity are the properties derived from network analysis that correlate with conductivities and diffusivities. Such correlation is expected to exist as macropores are major conduits of water and gases in soils. What is new? The last sentence of the abstract is “This could pave the way for the digital soil physics laboratory in the future.” Nothing is said in the manuscript on this matter. Is this the novelty? If yes then the authors should elaborate on this and explain what they mean. Do they suggest the need

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to run CTs on soil samples in addition to conductivity and diffusivity measurements?
Overall, the new take-home message of the work should be distilled and expressed.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 12, 12089, 2015.

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