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Earth System Dynamics
Discussions

Interactive comment on "Fractional governing equations of transient groundwater flow in unconfined aquifers with multi-fractional dimensions in fractional time" *by* M. Levent Kavvas et al.

Anonymous Referee #2

Received and published: 30 August 2019

It will be nice to have a global approach that has some background and reason for the research in the first paragraph of the introduction. Right now, it is jumping to the problem. The introduction section has adequate literature reviewed to come to the present research. Such is good but there are numerous jargon to be defined or clearly mentioned. For example, Riemann-Liouville fractional derivative, local Caputo derivatives. The text explained the intensive use of such derivatives. But for the general audience, the questions could arise how such derivatives were used. What could be the assumptions? The reviewer suggests revising the introduction section with implicit

assumptions behind them.

It seems that the authors tried to stick to a book chapter. It is not clear why this problem is strictly considered. Since this is the research paper, one should try with a real problem, not the virtual ones. The conclusion made by the authors is too technical. The reviewer does not see any possible application as well as future research behind this.

In equation (1) the definition of shi is strictly missing. In line 168, a comma is extra. In lines 286-287, the phrase "the network streamflow" should be better if it is like "the streamflow network."

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