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Hydrology and Earth System Sciences
Discussions

Interactive comment on "Analytical model for coupled multispecies advective dispersive transport subject to rate-limited sorption" *by* Jui-Sheng Chen et al.

Anonymous Referee #2

Received and published: 25 January 2019

Eq. (24) is considered as the major contribution in this paper. However, it is a frequency domain solution and requires numerical inverse transform to simulate concentrations as a function of time. Since this is pure closed-form solution, the authors may switch the focus on the effect of rate-limited sorption on predicted concentrations.

I agree that this is a progress in hydrology community. The authors have done a good review on the topic. From sequential reaction without sorption, to that with linear sorption, to rate-limited sorption, this paper brings analytical models closer to reality. Even though it is semi-analytical, it will benefit the community of biogradation of chlorinated solvents.

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Discussion paper

I also suggest the authors to move ahead on solutions in 2D and 3D and possibly improve BIOCHLOR using rate-limited sorption.

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