

Interactive comment on “A parsimonious analytical model for simulating multispecies plume migration” by J.-S. Chen et al.

Anonymous Referee #1

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The authors derived an analytical solution of 2D transport coupled with first-order chain reactions and species-specific retardation factors. The derived solution is an advance over Sun et al. (1999) for considering species-specific retardation and over Srinivasan and Clement (2008) for higher-dimensional transport.

Three examples are solid and convincing. Except for the 10-species chain used Srinivasan and Clement (2008), $4n+2$ series and PCE-TCE-DCE-VC decay networks may not be consecutive. Authors may acknowledge analytical solution development in the review for branching and converging decay networks and state the limitation of this solution in the conclusion.

I had hard time getting (A34). If there is no page limit, it will helpful to add the substitu-

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tion step.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 12, 8675, 2015.