

Interactive comment on “Time dependent dispersivity behavior of non-reactive solutes in a system of parallel fractures” by G. Suresh Kumar et al.

Anonymous Referee #1

Received and published: 24 July 2006

The paper is somewhat controversial, and I’m not satisfied with it at all. My criticism comes from the following issues: 1. from a general point of view, I do not see any “practical” aspects into studying solute transport in fractured media by means of spatial moments, unless the Authors suggest how is it possible to monitor solute propagation into fractured systems. 2. to my opinion the Authors did not go deeply through the literature, since I believe that most of the aspects they tried to investigate have been already considered in the past (see e.g. Cvetkovic and co-authors); 3. the Authors use a numerical approach; however, at the first glance, such type of transport appears to be solvable in analytical form by means of the Laplace transform (for instance, they could look at the approach developed by Leij in order to analyze similar problems). To my

opinion, the use of numerical tools in those cases in which the problem being studied is analytically solvable is not correct; 4. I do not believe that “general properties” can be assessed by using “empirical formulas” as the Authors state; 5. the Authors use a particular model to account for the mass transfer diffusion from/toward fractures. How does this model fit with the more classical first order linear kinetics? Is it consistent? The Authors should clarify on physical grounds.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 3, 895, 2006.

HESSD

3, S538–S539, 2006

Interactive
Comment

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper