Hydrology and Earth System Sciences Discussions

Interactive comment on "Stochastic analysis of field-scale heat advection in heterogeneous aquifers" *by* C.-M. Chang and H.-D. Yeh

Anonymous Referee #1

Received and published: 5 December 2011

This article describes the temporal evolution of the spread of temperature in a randomly heterogeneous porous media. The article is well written and organized but I am afraid that has no scientific contribution. The theoretical analysis is based on a well-establish analogy between the advection-dispersion equation of solutes and the heat equation. Once this analogy is presented, the authors basically reproduce the stochastic analysis of solute dispersion in aquifers conducted by Gelhar, Dagan and many others. The analogy is well known and therefore there is no adding value in presenting this. The implications of this analogy are also obvious, i.e., it reduces the problem to basically solve exactly the same stochastic partial differential equation as Gelhar did a long time ago. For all of this, I am afraid to have to suggest the rejection of this paper.

C5154

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 8, 10311, 2011.