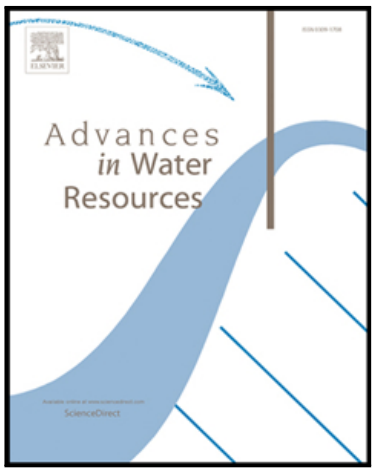

Multiscale Modelling of Dual-Porosity Porous Media; A Computational Pore-Scale Study for Flow and Solute Transport

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PII: S0309-1708(16)30748-5
DOI: 10.1016/j.advwatres.2017.04.013
Reference: ADWR 2828

To appear in: *Advances in Water Resources*

Received date: 8 December 2016
Revised date: 18 April 2017
Accepted date: 19 April 2017

Please cite this article as: Enno T. de Vries , Amir Raoof , Martinus Th. van Genuchten , Multiscale Modelling of Dual-Porosity Porous Media; A Computational Pore-Scale Study for Flow and Solute Transport, *Advances in Water Resources* (2017), doi: 10.1016/j.advwatres.2017.04.013

Highlights

- Increased aggregate porosity increased the mass transfer coefficient and resulted long tailing of BTCs.
- With decreased pore velocities in the aggregated domain, the mass transfer term decreased while long tailing was observed in the BTCs.
- The velocity ratio between the aggregated and macro domain could explain the magnitude of tailing observed in the BTCs.
- We have showed that a dual-porosity pore network generator provides the possibility to model the interaction between the macro domain (inter aggregate pores) and aggregated domain (intra aggregate pores).
- The flexibility of the developed generator provides a tool for analyzing pore scale properties, like aggregate porosity, and provides a new method for determining flow and transport parameters for dual-porosity porous media.