

## ***Interactive comment on* “Stochastic modeling of flow and conservative transport in threedimensional discrete fracture networks” by I.-Hsien Lee et al.**

### **Anonymous Referee #1**

Received and published: 19 September 2018

1) 3.1 Transport model verification by using HYDROGEOCHEM model ‘The boundary conditions along the boundaries parallel to the flow direction are specified to be no-flow boundary conditions, except for the cross-shaped fracture network case, where a slightly upward flow along the vertical fracture is introduced’ Please explain better the upward flow. Is it a constant head value of 9 m as shown by the figure?

2) 3.2 Transport model verification by using analytical solution On the basis of which criteria did you choose the dispersivities in the HYDROGEOCHEM model and the analytical solution?

3) 4.1 Transport model verification ‘The longitudinal dispersion is relatively obvious as

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compared to the transverse dispersion'. Explain this sentence.

4) Figure 9 Please define in a careful way the parameters P21 and P32 as well as  $P_{e21}$   $P_{e32}$   $P_{t32}$  as the notations are quite misleading. How did you calculate those parameters and do they differentiate among each other? And also better interpret the graph on the basis of those parameters and others such as fracture hydraulic conductivity and equivalent hydraulic conductivity. The discussion of graph 9d is not clear, please provide a more accurate interpretation of the results. 5) 5 Conclusions The Conclusion is a mere summary of the obtained results. Rewrite the conclusion adding a more extensive interpretation and discussion of the results, including clarifications on the novelty of the proposed approach and how it would provide a benefit to the scientific community.

Please also note the supplement to this comment:

<https://www.hydrol-earth-syst-sci-discuss.net/hess-2018-397/hess-2018-397-RC1-supplement.pdf>

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2018-397>, 2018.

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