



Multicomponent geochemical transport modeling in the unsaturated zone using ORCHESTRA

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A large amount of complex physical, chemical and biological processes take place in the unsaturated zone. Various advanced geochemical models exist which simulate these processes (PHREEQC, ORCHESTRA) in great detail. Application of these models to the unsaturated zone requires coupling with a model for flow in the unsaturated zone, like the coupled HYDRUS_1D and PHREEQC model (HP1). Recently, 1d flow in the unsaturated zone is integrated in ORCHESTRA, an advanced geochemical speciation model. This model is used to investigate certain scenarios concerning flow and transport in the rootzone and results are presented. Future research is directed to extend the model to multidimensional flow in the unsaturated zone.