

Evaluation of Selected Global Optimization Algorithms for Inverse Modeling of Richards Equations

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Abstract

The evaluation of values of parameters for nonlinear partial differential equations plays a crucial role in modeling process. The presented contribution provides an analysis of selected set of global optimization algorithms, which were used for searching the solutions of inverse problems of hydrodynamic flow in porous media using a Richards equation based model. The tested global optimization schemes were based on heuristics inspired by the natural processes. Selected versions of non-adaptive and self adaptive differential evolution, particle swarm optimization and other hybrid algorithm were applied. The presented analysis discusses the recommendations on selection of suitable optimization algorithm for inverse modeling of the Richards equation.

References

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