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MODELING OF SOLUTE TRANSPORT IN GROUND WATER FLOW

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ABSTRACT

This research presents a theoretical study of solute transport in ground water flow. The molecular diffusion process is accompanied simultaneously with advection diffusion process which effect the solute transport process in ground water flow. both diffusion processes can be described mathematically in terms of partial differential equations. This paper describes the implementation of a MATLAB algorithm that generates a numerical solution of a partial differential equations. Finite difference approximation was used to discretize the governed partial differential equations of dissolved salts transport in ground water flow at aquifer of west Zawiya area. The algorithm use a built in function (ode45-ordinary differential equation) solver coupled with a method of lines to a discrete form of a partial differential equations. In addition the paper will provide a proposal on possible extensions to the algorithm and future directions.

Keywords. Solute transport; Molecular diffusion.