



Chloride ion transport in a heterogeneous unsaturated soil: Field study and deterministic-stochastic analysis

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Solute concentration and water content profiles were intensively measured within an area of 7x40 m² in a moderately stratified Andosol, under steady-state condition using a water flux of 10 mm/d. After steady condition was attained, a conservative tracer (Cl⁻) was then applied as KCl at a rate of 0.105 kg Cl⁻/m². Soil samples were taken along seven transects at constant horizontal distance of 1 m, at 0.10 m depth interval on a depth of 0.90 m, and Cl⁻ concentration was allowed on soil extracts using ion selective electrode technology.

Firstly, results from spatial variability studies of transport volumes will be showed. Data from the experiment will be then used to evaluate parameters of the convective-dispersive model (CDE) and the lognormal stochastic-convective transfer model (CLT) using time-integral normalized resident concentrations. Model performance will be evaluated using the ME, RMSE and EF objective functions.