



## **Water quality dynamics at field and catchment scale**

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Surface water quality measurements in The Netherlands are scattered in time and space. Therefore, water quality status and its variations and trends are difficult to determine. In order to reach the water quality goals according to the European Water Framework Directive, we need to improve our understanding of the dynamics of surface water quality and the processes that affect it. We have therefore initiated a campaign to observe fluxes of water and solutes at numerous locations within a catchment with a high temporal resolution.

The study is situated in the 7 square km Hupsel brook catchment in The Netherlands, which is a predominantly agricultural, gently sloping catchment with mostly sandy soils. Many fields have tube drain discharging into a dense ditch network that feeds into the brook and its subsidiaries. The experimental setup focuses on the dynamics in travel times and travel pathways of solutes in the hydrological top system (soil and shallow groundwater), separating groundwater flow to ditches from tube drain discharges and overland flow. A measurement campaign of solute concentrations at 3 nested scales (tube drain, sub-catchment and catchment) using ion-selective electrodes with a high temporal resolution gives insight in key processes for pollutant transport at field- and catchment scale.

We will present a preliminary analysis of the data to demonstrate the potential of this type of nested-scale, high frequency observations. The presentation will focus on the behaviour of several ions and nutrients during and after a storm event to assess the impact of tube drainage on catchment scale solute transport.