Experimental units
Seepage flow, groundwater flow and filtration

Basic experiments

HM 152
Potential flow

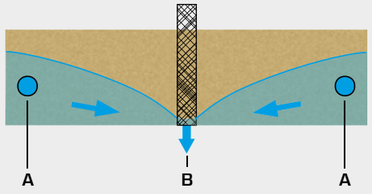
- simulation of two-dimensional, inviscid potential flow in a Hele-Shaw cell
- visualisation of streamlines using a contrast medium
- influence of sources and sinks on the streamlines

Flow pattern with a source

Flow pattern with a sink

HM 167
Groundwater flow

- groundwater levels over time with one and more outlets
- various models allow the study of water inrush into dikes and excavation ditches
- lowering of groundwater in excavation ditches

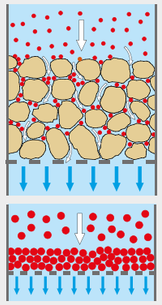


Groundwater level over time in a sand bed with one outlet

A water supply, **B** water drain;
blue arrows flow direction

CE 116
Cake and depth filtration

- seepage flow in a filter
- different suspensions and filter medium layers
- application of Darcy's law to determine the filtration velocity

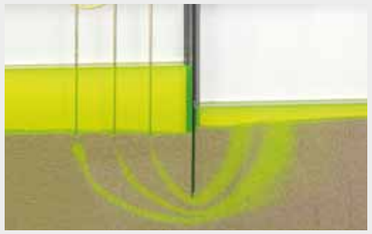


Depth filtration

Cake filtration

HM 169
Visualisation of seepage flows

- groundwater levels over time with one and more outlets
- various models allow the study of water inrush into dikes and excavation ditches
- lowering of groundwater in excavation ditches

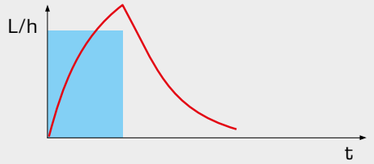


Flow net under a sheet pile

Relationship between precipitation, seepage and groundwater flow

HM 141
Hydrographs after precipitation

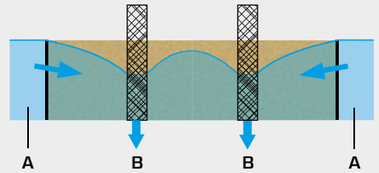
- precipitation-drain relationship
- precipitation time, lag time and measurement time can be adjusted via separate timers
- effect of rainwater retention basin



hydrograph,
precipitation

HM 165
Studies in hydrology

- precipitation-drain relationship
- seepage flows and groundwater flows in soils
- supply and drain over a large area (groundwater)
- lowering of groundwater via wells and drainage

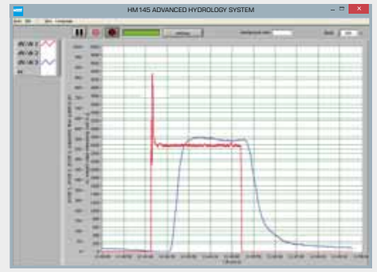


Groundwater level over time in a sand bed with two wells

A water supply, **B** water drain through wells;
blue arrows flow direction

HM 145
Advanced hydrological investigations

- precipitation-drain relationship
- seepage flows and groundwater flows in soils
- supply and drain (groundwater and running waters) over a large area and at individual points
- lowering of groundwater via wells and drainage
- sediment transport and obstacles in running waters
- GUNT software for data acquisition of the water supplies and drains and the amount of sediment as a function of time



Software screenshot

Water drain for persistent rain with saturation of the soil
precipitation,
drain