# Flow123d tutorial 2 – "1D column with infiltration"

## Contents



## 1 Description and results

This is a variant of `01_column.yaml`. See therein for more details.

We change the atmospheric pressure on the surface to the more realistic infiltration 200 mm/yr (= 6.34e-9 m/s):

```
    - region: .surface
      bc_type: total_flux
      bc_flux: 6.34E-09
```

In the resulting file `water_balance.txt` we can see that the value of the input and output flux changes to 6.34e-8. The visual results are similar to the case `01_column.yaml`.

## 2 The control file

Below is the complete YAML file `02_column_infiltration.yaml`.

```
flow123d_version: 1.8.9
problem: !Coupling_Sequential
  description: Example 1 of real locality - column 1D model with infiltration
  mesh:
    mesh_file: ./01_mesh.msh
  flow_equation: !Flow_Darcy_MH
    nonlinear_solver:
      linear_solver: !Petsc
        a_tol: 1e-15
        r_tol: 1e-15
    input_fields:
      - region: rock
        conductivity: 1e-8
        cross_section: 1
      - region: .tunnel
```

```
    bc_type: dirichlet
    bc_pressure: 0
  - region: .surface
    bc_type: total_flux
    bc_flux: 6.34E-09
balance: true
output:
  output_stream:
    file: flow.msh
    format: !gmsh
      variant: ascii
  output_fields:
    - piezo_head_p0
    - pressure_p0
    - pressure_p1
    - velocity_p0
```