Development of MATLAB script

Compare model simulations with analytical solutions

No  Validation  Yes

Input data
- Holocene temperature reconstruction
- Geothermal gradient
- Geothermal properties

Simulation of ground temperatures

Compare with observations
- Depth of permafrost and frozen ground

1DHT

Simulated permafrost depth

Simulated permafrost aggradation

Compensate for dynamic storage effects

Equivalent recharge

Source term

Model setup

Simulation of groundwater flow with MODFLOW

Compare with observations
- Head and spring discharge

Evaluation of modelling results

3D steady-state groundwater model

Input data
- Geology
- Topography
- Hydrogeological properties