



Ontwikkelingen TimML

TKI TIM

David Brakenhoff
Mark Bakker

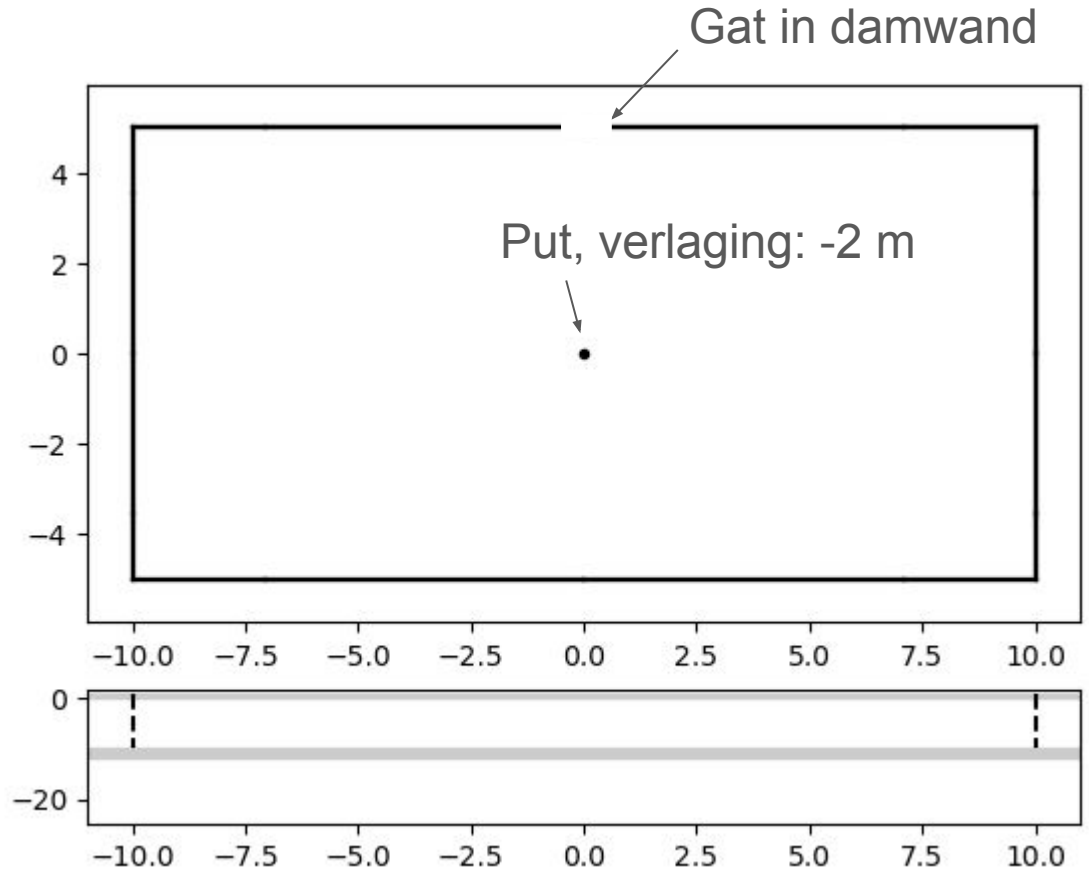
16 april 2024

Inhoud

- Voorbeeld bouwput met lekkende wanden
- Verbeteringen documentatie

Voorbeeld bouwput

- Bouwput 20 x 10 m
- 2 lagen
- Lekkende damwanden en een gat
- Onttrekkingsput in het midden

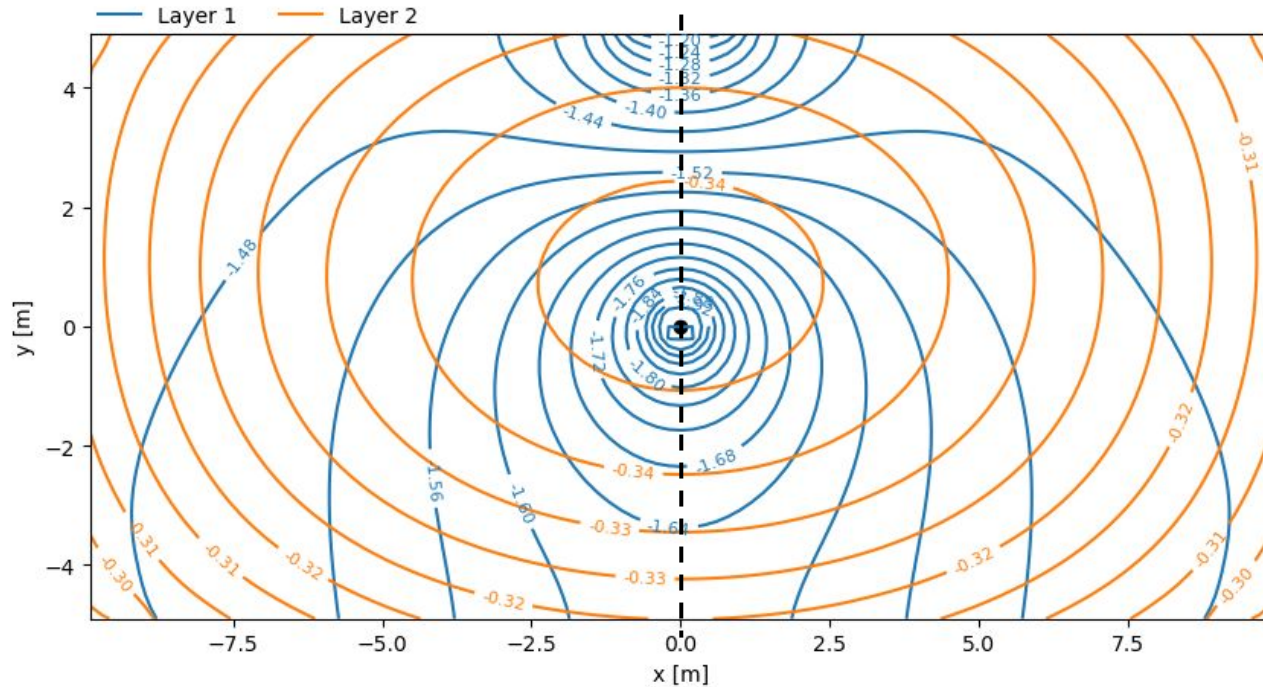


Voorbeeld bouwput

```
ml = tml.ModelMaq(kaq=kh, z=z, c=[ctop, caq], topboundary="semi", hstar=0.0)
pit = tml.LeakyBuildingPitMaq(
    ml,          # model
    xy,          # hoekpunten
    kaq=kh,      # horizontale doorlatendheid
    z=z,         # boven- en onderkant lagen
    c=c,         # weerstand scheidende lagen
    res=res,     # weerstand damwand
    layers=[0], # lagen met damwand
)
well = tml.HeadWell(ml, 0.0, 0.0, hw=-2, rw=rw)
ml.solve()
```

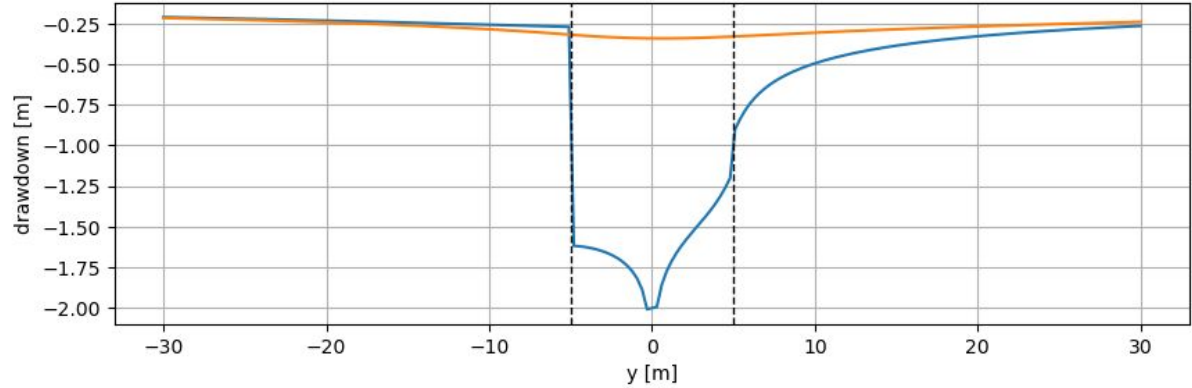
Voorbeeld bouwput

- Contour stijghoogte



Voorbeeld stijghoogte

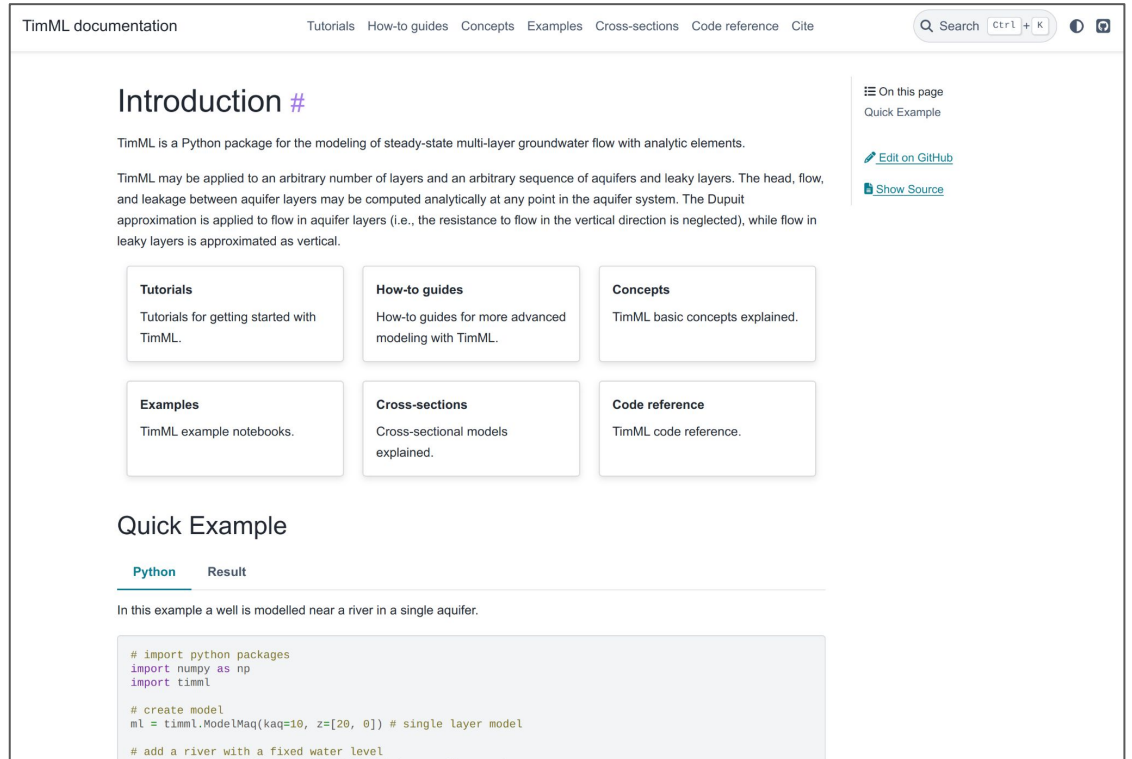
- Stijghoogte doorsnede
- Flux over de rand:



Side	S	E	N	W	total
Layer					
0	4.0	2.0	79.0	2.0	87.0
1	20.0	10.0	13.0	10.0	53.0
total	24.0	12.0	92.0	12.0	139.0

Documentatie TimML

- Nieuwe documentatie website
- timml.readthedocs.io
- Wordt nog aan gewerkt



TimML documentation

Tutorials How-to guides Concepts Examples Cross-sections Code reference Cite

Q Search Ctrl + K

Introduction

TimML is a Python package for the modeling of steady-state multi-layer groundwater flow with analytic elements.

TimML may be applied to an arbitrary number of layers and an arbitrary sequence of aquifers and leaky layers. The head, flow, and leakage between aquifer layers may be computed analytically at any point in the aquifer system. The Dupuit approximation is applied to flow in aquifer layers (i.e., the resistance to flow in the vertical direction is neglected), while flow in leaky layers is approximated as vertical.

On this page
Quick Example

[Edit on GitHub](#)

[Show Source](#)

- Tutorials**
Tutorials for getting started with TimML.
- How-to guides**
How-to guides for more advanced modeling with TimML.
- Concepts**
TimML basic concepts explained.
- Examples**
TimML example notebooks.
- Cross-sections**
Cross-sectional models explained.
- Code reference**
TimML code reference.

Quick Example

[Python](#) [Result](#)

In this example a well is modelled near a river in a single aquifer.

```
# import python packages
import numpy as np
import timml

# create model
ml = timml.ModelMaq(kaq=10, z=[20, 0]) # single layer model

# add a river with a fixed water level
```

Documentatie TimML

- Tutorials
 - Beginnen met TimML
- How-to guides
 - Voor meer geavanceerde gebruikers, b.v. hoe reken ik een bouwput door?
- Concepts
 - Achterliggende concepten en theorie in TimML
- Examples
 - Voorbeelden van toepassingen TimML