



# **HYDROLIB**

## **Betrouwbare hydro software voor geautomatiseerd modelleren en rekenen**

### **Voortgangsoverleg 1**

Arthur van Dam, Ruben Dahm, Rinske Hutten

26 april 2021

# Agenda van vandaag

- 11:00 Opening
- 11:10 WP1 Open Source Community - Ruben
- 11:20 WP2 Architectuur – Arthur
- 11:30 WP4(/3)Pilots – Rinske  
WDO Delta + Arcadis – Arjon, Thijs  
WS Limburg, WSRivierenland + HKV – Bertus
- 11:55 WP5 Modellerkeuzes en Automatisering – Janneke, Carine
- 11:10 Sluiting

26 april 2021 (nu!)



winter '20/'21

lente '21

zomer '21

herfst '21

winter '21/'22

lente '22

zomer '22

Community



Architectuur



Scripts



Pilots









Modelleerkeuzes en automatisering



D-HYDRO



# Acties van vorige keer

- Werkgroep Open Source Communities opstarten (**Februari** → datumprikker door Ruben) 
- Werkgroep Architectuur opstarten (**Begin februari** → datumprikker door Arthur) 
- Datumprikker voortgangsoverleg 1 (eind maart → datumprikker door Arthur) 
- “Koppels” van bureaus + waterschap gaan scripting+pilot ideeën voorbereiden (**Feb+maart**)  
- Offerte/opdrachtverlening bureaus in gang zetten (**Eind januari** → Arthur) 

# Andere recente ontwikkelingen omtrent D-HYDRO

- 24 maart j.l. **TKI-overkoepelend voortgangsoverleg D-HYDRO**  
30+ aanwezigen  
Volgende overleg is op: woensdag 19 mei a.s.



- 31 maart j.l. **Nieuwe release D-HYDRO Suite 1D2D 0.9.9**  
Diverse GUI en kernel verbeteringen  
Ondertussen 49 keer gedownload.

- **TKI-5 nieuws**  
Voorstel is beoordeeld. Minor aanpassingen werden gevraagd, ondertussen opnieuw ingediend.  
Uitslag/goedkeuring als het goed is eind deze week.

- **Nieuwe vertegenwoordiger vanuit Arcadis**  
Floor Speet volgt Muriël Houdé op binnen HYDROLIB.  
Welkom!



**Floor Speet** · 1st  
Projectleider en Teamleider Water & Ruimte Amsterdam bij Arcadis  
Amsterdam, North Holland, Netherlands · [Contact info](#)





# WP1 Open Source Community

Ruben Dahm



# | werkpakket: open source community

- Open source gaat in de kern om samenwerking. Om samen iets groters te maken dan eenieder van onze organisaties zelf had kunnen maken.
- Doel van dit werkpakket is om die samenwerking soepel te laten verlopen zodat we ons op een open, respectvolle, en met aandacht voor elkaar (en elkaars organisaties) wijze kunnen toeleggen op de (ontwikkeling, gebruik en onderhoud van de) HYDROLIB code.

The screenshot shows the Python Software Foundation website. The header includes the Python logo, 'SOFTWARE FOUNDATION', a 'Donate' button, a search bar, and 'GO', 'Socialize', and 'Sign In' buttons. The navigation menu includes 'About', 'Sponsorship', 'Membership', 'Donations', 'Grants', 'Invoices & Reimbursements', 'Legal', 'Media', and 'PSF Blog'. The main content area is titled 'Code of Conduct' and contains the following text:

PSF » Membership » Python Community Code of Conduct

### Code of Conduct

The Python community is made up of members from around the globe with a diverse set of skills, personalities, and experiences. It is through these differences that our community experiences great successes and continued growth. When you're working with members of the community, this Code of Conduct will help steer your interactions and keep Python a positive, successful, and growing community.

Our Community

Members of the Python community are **open, considerate, and respectful**. Behaviours that reinforce these values contribute to a positive environment, and include:

- **Being open.** Members of the community are open to collaboration, whether it's on PEPs, patches, problems, or otherwise.
- **Focusing on what is best for the community.** We're respectful of the processes set forth in the community, and we work within them.
- **Acknowledging time and effort.** We're respectful of the volunteer efforts that permeate the Python community. We're thoughtful when addressing the efforts of others, keeping in mind that often times the labor was completed simply for the good of the community.
- **Being respectful of differing viewpoints and experiences.** We're receptive to constructive comments and criticism, as the experiences and skill sets of other members contribute to the whole of our efforts.
- **Showing empathy towards other community members.** We're attentive in our communications, whether in person or online, and we're tactful when approaching differing views.
- **Being considerate.** Members of the community are considerate of their peers -- other Python users.
- **Being respectful.** We're respectful of others, their positions, their skills, their commitments, and their efforts.
- **Gracefully accepting constructive criticism.** When we disagree, we are courteous in raising our issues.
- **Using welcoming and inclusive language.** We're accepting of all who wish to take part in our activities, fostering an environment where anyone can participate and everyone can make a difference.

The screenshot shows a 'Community profile' page. It features a heading 'Community profile' and a sub-heading 'Here's how this project compares to [recommended community standards](#).' Below this is a 'Checklist' table with a progress bar at the top. The checklist items are:

Item	Status
✓ Description	Completed
✓ README	Completed
● Code of conduct	Not completed
✓ Contributing	Completed
✓ License	Completed
● Issue templates	Not completed
● Pull request template	Not completed
● Repository admins accept content reports	Not completed

At the bottom right, there is a link: 'What is the community profile?'.



# | werkpakket: open source community

- Wie: Frank, Gerry, Bertus, Daniel, Paul, Arthur, Ruben
- 8 maart jl. startoverleg



# HYDROLIB consortium



UW WATERSCHAP



## Deltares

## HydroLogic

## Deltares





# OSC | bouwen aan onze community roadmap

Waar werken we naar toe (2,6,18mnd, ++)?

We willen dat het HYDROLIB product goed bruikbaar wordt en blijft.

Dat betekent o.a. voor het proces:

- duidelijkheid over besluitvorming
- afstemming intern
- communicatie extern
- ...

En het betekent o.a. voor het product

- duidelijkheid over licentie / ip / contributies
- keuze van platform
- conventies rondom platform gebruik
- duidelijke structuur qua taken
- duidelijke handleiding
-



# OSC | community roadmap: korte termijn

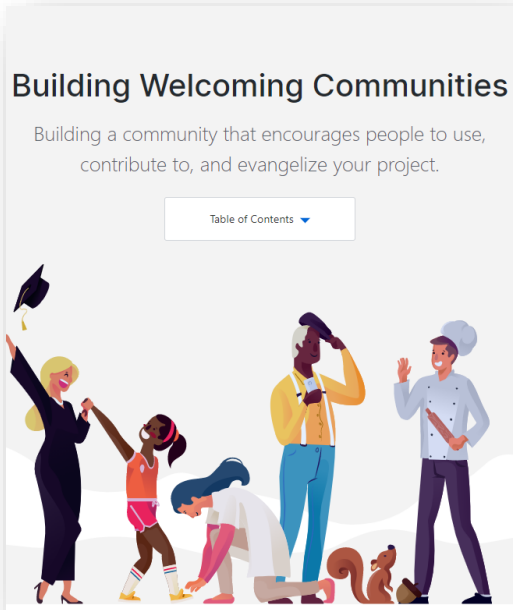
- Platform keuze (Github, Gitlab, ...)
- Licentiekeuze (GPLv3, MIT, LGPL,...) en IP / copyright
- Documentatie (readthedocs, ...)
- Rollen en taken (in afstemming met WP Architectuur)
- Hoe te besluiten bij verschillende meningen
- Externe communicatie (wanneer beginnen we?)
- Extern gebruik (staan we nu voor keuzes die 2022+ potentiële uptake beïnvloeden?)
- ...



# OSC | community roadmap

- Observaties:
  - Veel energie om met HYDROLIB en een community aan de slag te gaan
  - Maar praten we eigenlijk wel over hetzelfde?
  - En waarom moet we het nu hebben over licenties, platformen, rollen

# After-lunch mini-lectures



HYDROLIB als 'Open source community'

26 april

	 MIT	 GPLv3 Free as in Freedom
Type	Permissive	Copyleft
Provides copyright protection	✓ TRUE	✓ TRUE
Can be used in commercial applications	✓ TRUE	✓ TRUE
Provides an explicit patent license	✗ FALSE	✗ FALSE
Can be used in proprietary (closed source) projects	✓ TRUE	✗ FALSE

Licenties en IP

05 mei



Samen ontwikkelen op een platform

12 mei



Documentatie

19 mei

# After-lunch mini-lectures



## Building Welcoming Communities

Building a community that encourages people to use, contribute to, and evangelize your project.

Table of Contents ▾

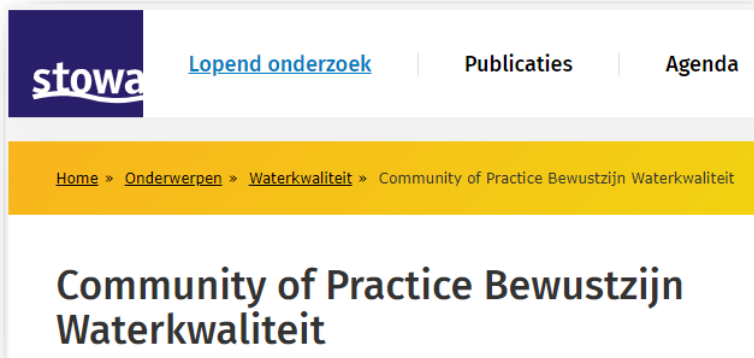


HYDROLIB als 'Open source community'

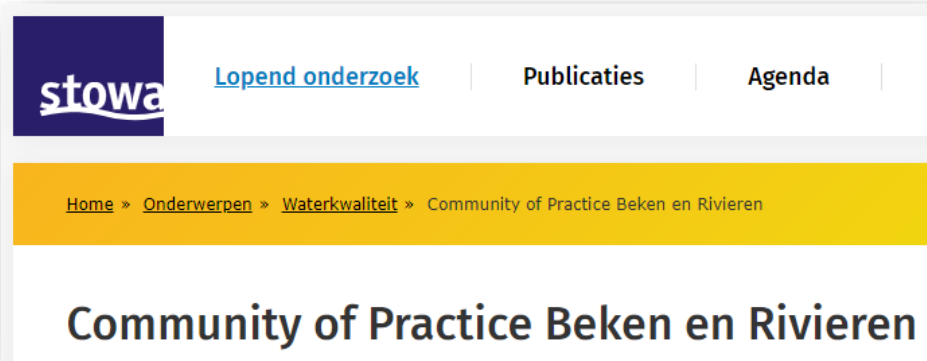
26 april



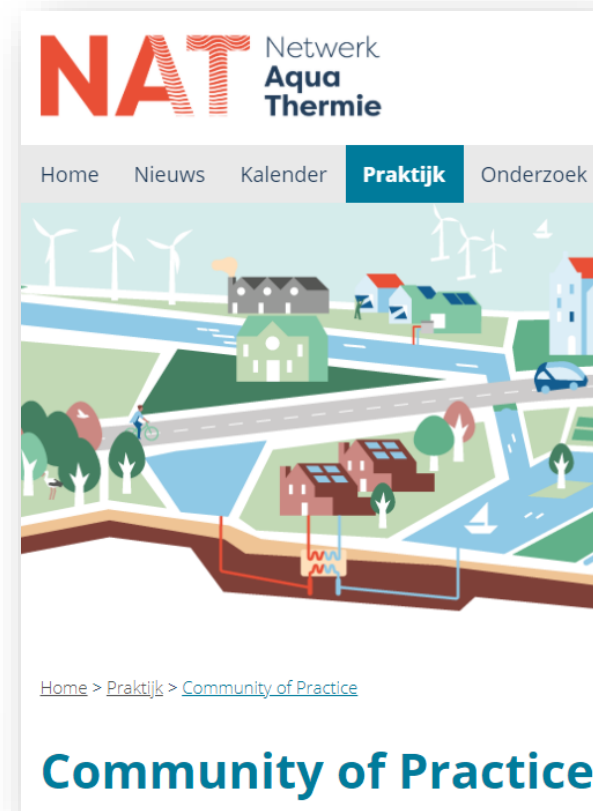
# OSC | open source community?



De Community of Practice Bewustzijn Waterkwaliteit **deelt** slimme oplossingen om de waterkwaliteit te verbeteren door **samenwerking** en communicatie met burgers, boeren, bedrijven, tuinders en overheden



De Community of Practice (CoP) Beken en Rivieren is bedoeld om **kennis en ervaring te verspreiden en uit te wisselen** over onderwerpen die spelen in dit type wateren.



De Community of Practice Aquathermie **verbindt** organisaties die bezig zijn met de toepassing van aquathermie. Alles draait om **kennisdeling**: het leren van elkaars praktijkervaringen.

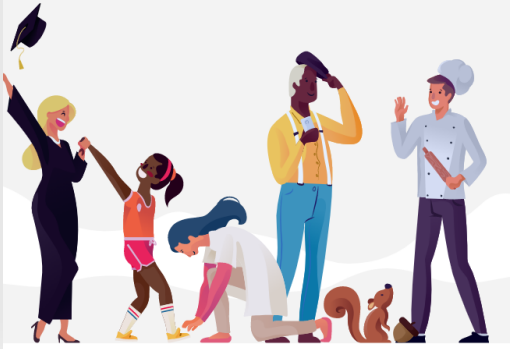


# OSC | open source community?

## Building Welcoming Communities

Building a community that encourages people to use, contribute to, and evangelize your project.

Table of Contents ▾



HYDROLIB als 'Open source community'

```
master delft3dfmpy / delft3dfmpy / core / dfm.py / <> Jump to - Go to file ...
RuudHurkmans - structure time series in *.bc format; start of time series independ... Latest commit 53503b4 on 15 Mar History
3 contributors
1561 lines (1286 sloc) | 63 KB Raw Blame
1 import itertools
2 import logging
3 import os
4
5 import geopandas as gpd
6 import numpy as np
7 import pandas as pd
8 from tqdm.auto import tqdm
9 from scipy.spatial import KDTree
10 from shapely.geometry import LineString, Point, Polygon
11
12 from delft3dfmpy.converters import hydamo_to_dflowfm
13 from delft3dfmpy.core import checks, geometry
14 from delft3dfmpy.datamodels.common import ExtendedGeoDataFrame
15 from delft3dfmpy.datamodels.cstructures import meshgeom, meshgeomind
16 from delft3dfmpy.io import dfmreader
17 logger = logging.getLogger(__name__)
18
19 class DFlowFMModel:
20     """Main data structure for dflowfm model. Contains subclasses
21     for network, structures, cross sections, observation points
22     and external forcings.
23     """
24
25     def __init__(self):
26
27         self.mdu_parameters = {}
28
29         self.network = Network(self)
30
31         self.structures = Structures(self)
32
33         self.crosssections = CrossSections(self)
34
35         self.observation_points = ObservationPoints(self)
```

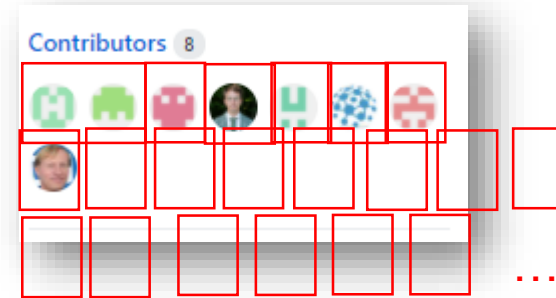




# OSC | open source community?

The screenshot shows the GitHub interface for the repository 'Delft3D Flexible Mesh Python'. The main content area displays a list of files and folders with their commit history. The right sidebar contains metadata such as 'About', 'Releases', 'Packages', 'Contributors', and 'Languages'.

File/Folder	Description	Last Commit
.vscode	Shift face coordinates to centroid	8 months ago
data	- structure time series in *.bc format; start of time series independ...	last month
delft3dfmpy	- structure time series in *.bc format; start of time series independ...	last month
examples	#16 parameters specified for conversions from osm to dflowfm	4 months ago
notebooks	- structure time series in *.bc format; start of time series independ...	last month
.editorconfig	Commit of complete version 0.1	2 years ago
.gitignore	Update .gitignore	4 months ago
.travis.yml	Commit of complete version 0.1	2 years ago
AUTHORS.rst	Major updates to the package, as well as small bug fixes. A number of...	13 months ago
CONTRIBUTING.rst	Commit of complete version 0.1	2 years ago
HISTORY.rst	Commit of complete version 0.1	2 years ago
LICENSE	Commit of complete version 0.1	2 years ago
MANIFEST.in	Commit of complete version 0.1	2 years ago
README.rst	Update README.rst	3 months ago
Release_notes.txt	Major updates to the package, as well as small bug fixes. A number of...	13 months ago
environment.yml	- structure time series in *.bc format; start of time series independ...	last month
pyproject.toml	improve toml file	7 months ago



- HKV
- Deltares
- D2HYDRO
- WS Rivierenland



# OSC | community roadmap

- Platform keuze (Github, Gitlab, ...)
- Licentiekeuze (GPLv3, MIT, LGPL,...) en IP / copyright
- Documentatie (readthedocs, ...)
- Rollen en taken (in afstemming met WP Architectuur)
- Hoe te besluiten bij verschillende meningen
- Externe communicatie (wanneer beginnen we?)
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- ...



## WP2 Architectuur

Arthur van Dam



# Werkgroep Architectuur

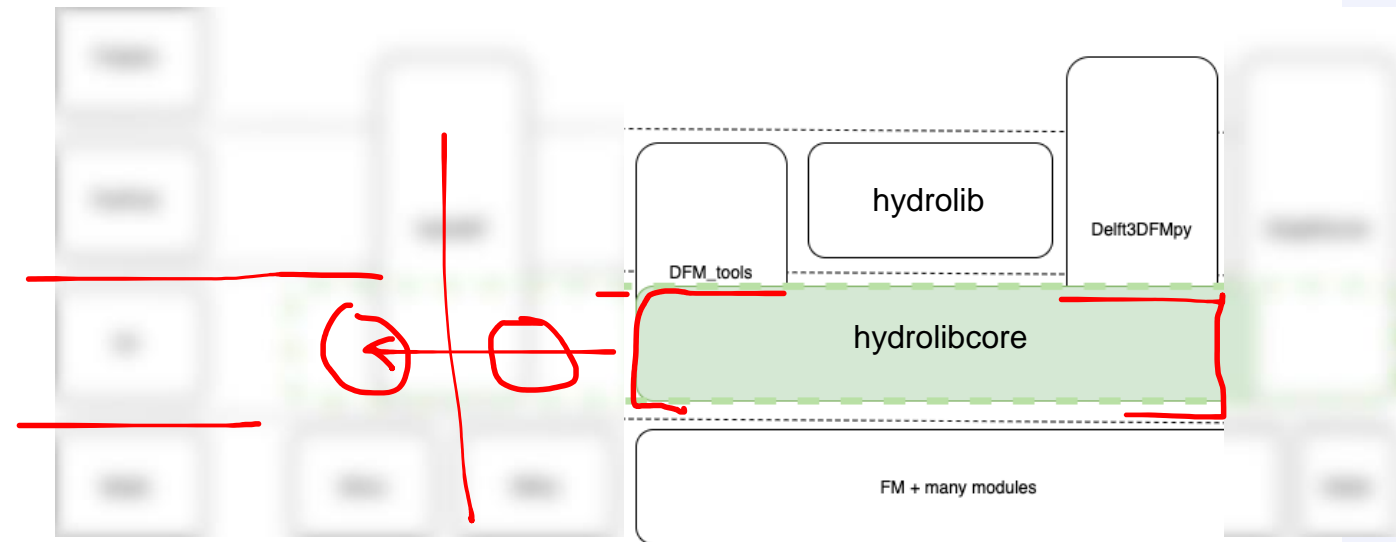
Arthur van Dam, Guus Rongen+Bertus de Graaff, Daniël Tollenaar, Maarten Pronk, Rinske Hutten

- Opties voor intellectuele eigendomsrechten en open source licentiekeuzes afgewogen. Principekeuze voorbereid. Toelichting op 5 mei in After lunch lezing.
- HYDROLIB Python pakketstructuur besloten, en ingericht op GitHub.
- Start gemaakt met analyse huidige D-HyDAMO / delft3dfmpy code, voorbereiding opname in HYDROLIB.



# Twee HYDROLIB-pakketten. 1: hydrolibcore

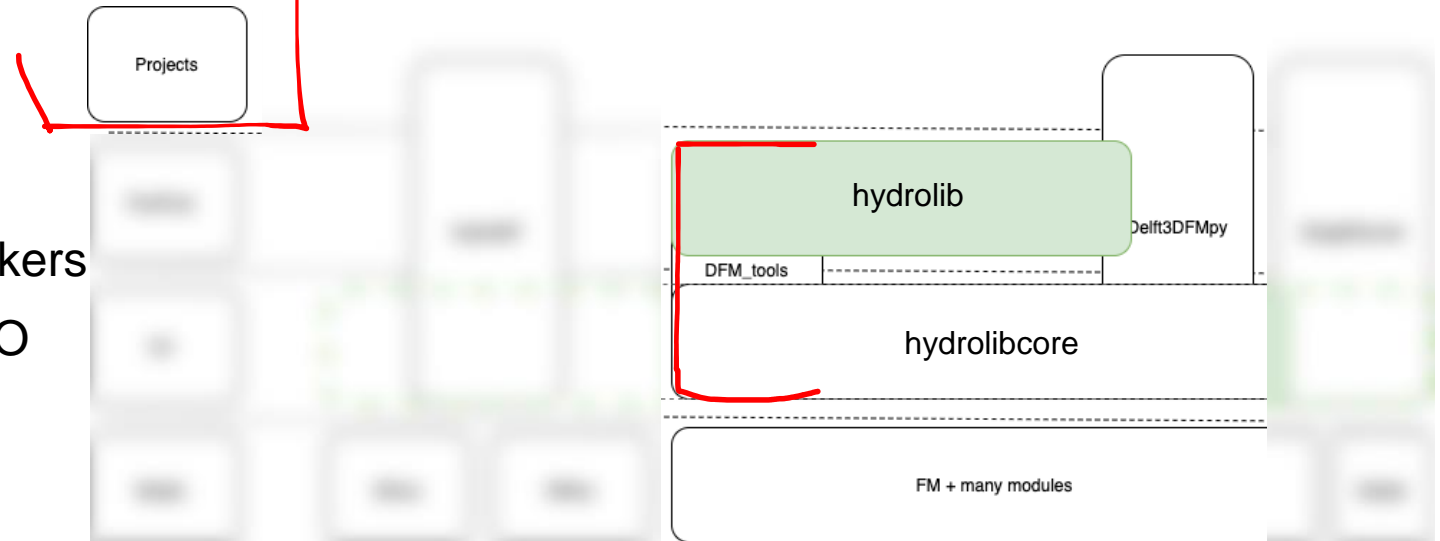
- Alle **I/O bestanden** van D-HYDRO
  - RTC (xml) RR FM
  - DIMR
- Validity checks daarop
- FM start/stop/progress (Docker)
- Gridgeneratie tools
  - Gebruik MeshKernel bibliotheek (afkomstig uit D-HYDRO)
  - Gebruik SMS gridgenerator
- Bijdrages van iedereen. Maintainer is Deltares, moet in lijn gehouden worden met D-HYDRO releases.



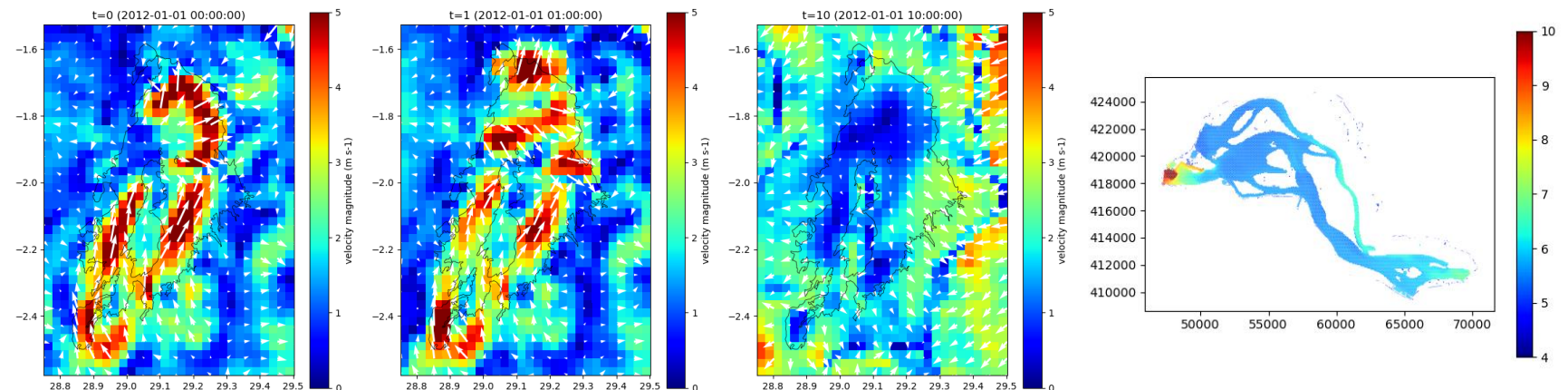


# Twee HYDROLIB-pakketten. 2: hydrolib

- Deels gebouwd op hydrolibcore
- Hèt startpunt voor veel eindgebruikers
- Pre/post processing van D-HYDRO
- Modelgeneratie, conversies
  - D-HyDAMO
  - OpenStreetMap



- Plotting
- Stochastische runs, model/scenario diffs
- Bijdrages van iedereen. Maintainer gekozen per deelprodukt.





# HYDROLIB licenties: keuzes maken op onderdelen

1. Package **hydrolibcore** (niet hydrolib) is één Python package:  
één licentie, één GitHub repository, één project t.b.v. publication op PyPI. 📄 MIT License
2. Package **hydrolib** (niet hydrolibcore) is één Python package:  
één licentie, één GitHub repository, één project t.b.v. publication op PyPI. 📄 LGPL-3.0 License
  - Hieronder valt dhydamo, en later ook onderdelen van dfm\_tools, osm2dhydro, ...  
Bijv.: “**import hydrolib.dhydamo**”
  - Dit werkt handig zolang alle subpackages dezelfde licentie gebruiken.



# De twee HYDROLIB GitHub repositories staan klaar

The screenshot shows the GitHub repository page for **Deltares / HYDROLIB-core**. The repository is private and has 3 unwatched items, 0 stars, and 0 forks. The main branch is `main` with 1 branch and 0 tags. The repository description is "Core code around the I/O of the D-HYDRO-suite". The README file is visible, titled "HYDROLIB-core", and contains the text: "HYDROLIB-core is the core library of Python wrappers around the D-HYDRO model files (input and output) and model engines (kernel libraries)". The repository has 2 contributors: arthurvd (Arthur van Dam) and evetion (Maarten Pronk).

The screenshot shows the GitHub repository page for **Deltares / HYDROLIB**. The repository is public and has 4 unwatched items, 1 star, and 1 fork. The main branch is `main` with 2 branches and 0 tags. The repository description is "Python wrappers around D-HYDRO Suite". The README file is visible, titled "HYDROLIB", and contains the text: "HYDROLIB is a Python package with tools for preprocessing, postprocessing and analysis of hydrodynamical data and simulation results, currently focused on (but not restricted to the D-HYDRO Suite for hydrodynamical simulations). HYDROLIB builds upon the basic D-HYDRO I/O functionality provided by the HYDROLIB-core package." The repository has 4 contributors: evetion (Maarten Pronk), arthurvd (Arthur van Dam), gitter-badger (The Gitter Ba...), and michalklecze (Michal Kleczek).





# Wie wil gaan bijdragen? contributor/maintainer

## HYDROLIB-core

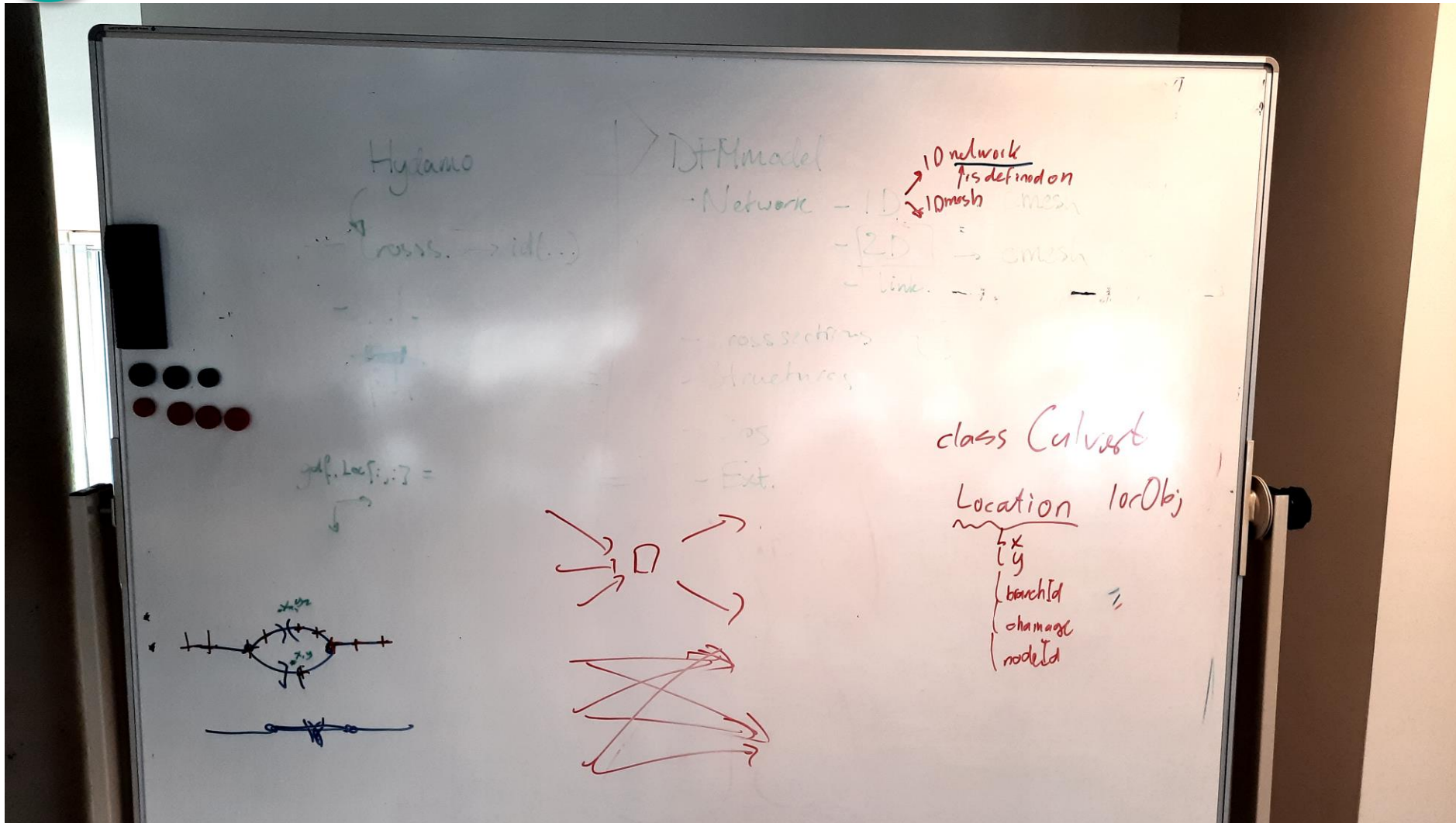
<input type="checkbox"/>		<b>Arthur van Dam</b> arthurvd		Role: Admin	
<input type="checkbox"/>		<b>Daniel Tollenaar</b> Awaiting d2hydro's response	Pending Invite	Role: Write	
<input type="checkbox"/>		<b>Maarten Pronk</b> evetion		Role: Admin	
<input type="checkbox"/>		<b>mattijn</b> Awaiting mattijn's response	Pending Invite	Role: Write	
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<input type="checkbox"/>		<b>rongen</b> Awaiting rongen's response	Pending Invite	Role: Write	
<input type="checkbox"/>		<b>RuudHurkmans</b> Awaiting RuudHurkmans's response	Pending Invite	Role: Write	
<input type="checkbox"/>		<b>WSRL-HVG</b> Awaiting WSRL-HVG's response	Pending Invite	Role: Write	

## HYDROLIB

<input type="checkbox"/>		<b>Arthur van Dam</b> arthurvd		Role: Admin	
<input type="checkbox"/>		<b>Daniel Tollenaar</b> Awaiting d2hydro's response	Pending Invite	Role: Write	
<input type="checkbox"/>		<b>Maarten Pronk</b> evetion		Role: Admin	
<input type="checkbox"/>		<b>grongen</b> Awaiting grongen's response	Pending Invite	Role: Maintain	
<input type="checkbox"/>		<b>mattijn</b> Awaiting mattijn's response	Pending Invite	Role: Write	
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<input type="checkbox"/>		<b>RuudHurkmans</b> Awaiting RuudHurkmans's response	Pending Invite	Role: Maintain	
<input type="checkbox"/>		<b>WSRL-HVG</b> Awaiting WSRL-HVG's response	Pending Invite	Role: Write	



# D-HyDAMO Code-analyse





# Architectuur vervolg

## **Breed delen van enkele adviezen met jullie allemaal:**

- IP-rechten en Licenties, Online samenwerken, Documentatie: in after lunch lectures komende weken.

## **Volgende week 2e samenwerkdag in Delft, Guus, Maarten, Arthur**

- Aanleggen eerste directorystructuur
- Functionaliteitswensen roostergeneratie-API doorgeven
- Vervolg analyse D-HyDAMO code, ontwerp overgang naar HYDROLIB-core + HYDROLIB.
- Issues aanmaken voor eerste taken/functionaliteiten



## WP2 Architectuur

Arthur van Dam



## WP4 Pilots

Rinske Hutten, Arjon Buijert, Thijs Lieverse, Bertus de Graaff



## WP5 Modellerkeuzes en automatisering

Janneke Remmers, Carine Wesselius



Tot slot

# Vervolgafspraken

- Open Source Communities, After lunch lectures (**Mei** → Jullie zijn al uitgenodigd door Ruben)
- Architectuur 2e samenwerkdag (**volgende week**)
- Training HYDROLIB-scripting (**Eind mei** → Datumprikket Arthur)
- “Koppels” van bureaus + waterschap gaan door/echt starten met scripting+pilots (**April, mei, juni**)
- Opdrachtverlening bureaus afronden (**Volgende week** → Arthur)





Vragen?

# HYDROLIB Contact



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✉ [ruben.dahm@deltares.nl](mailto:ruben.dahm@deltares.nl)



✉ [rinske.hutten@deltares.nl](mailto:rinske.hutten@deltares.nl)



Deltares