C. Muñoz*, C. Troupin*
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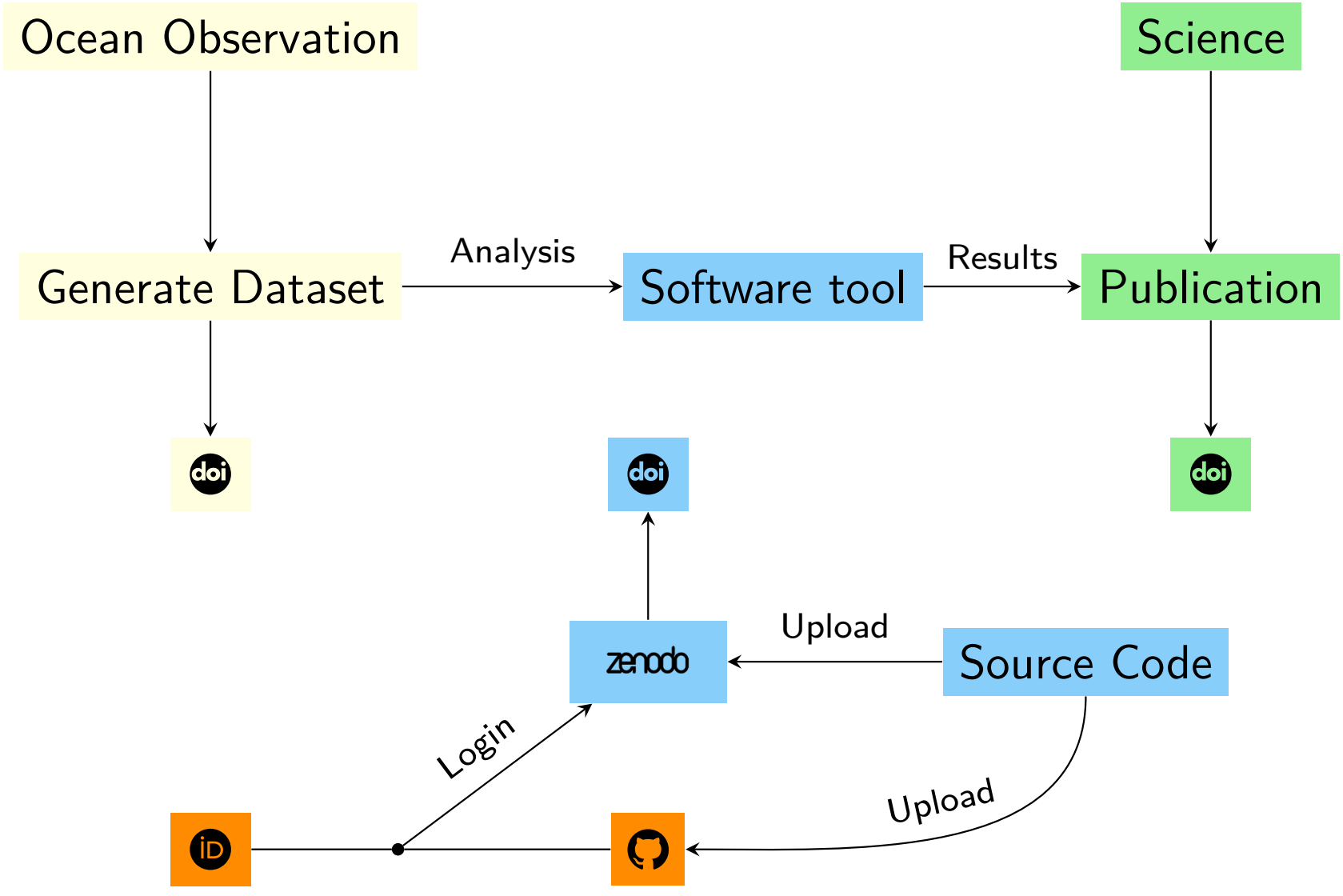
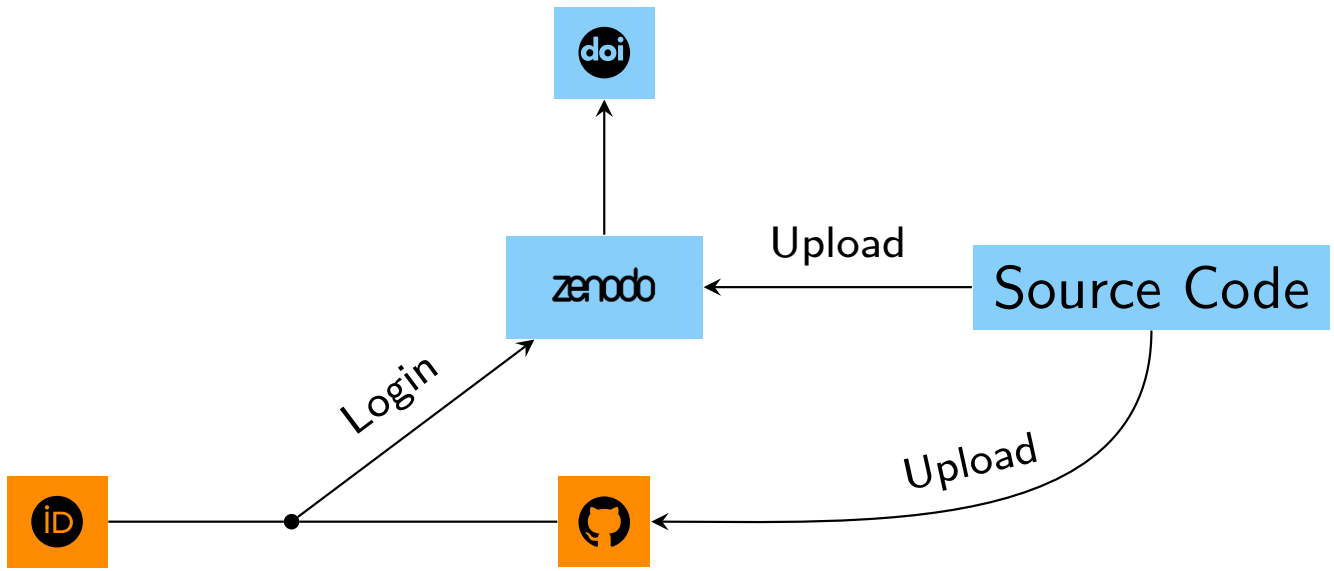
*GHER - University of Liège
*SOCIB Data Centre

# *Software citation & process traceability*

# *Motivations:*

Reproducibility & Traceability


Ocean Observation
Science
Generate Dataset
Analysis
Software tool
Results
Publication
doi
doi
doi
zenodo
Upload
Source Code
Login
Upload
iD


doi
zenodo
Upload
Source Code
Login
Upload
iD

# Goals

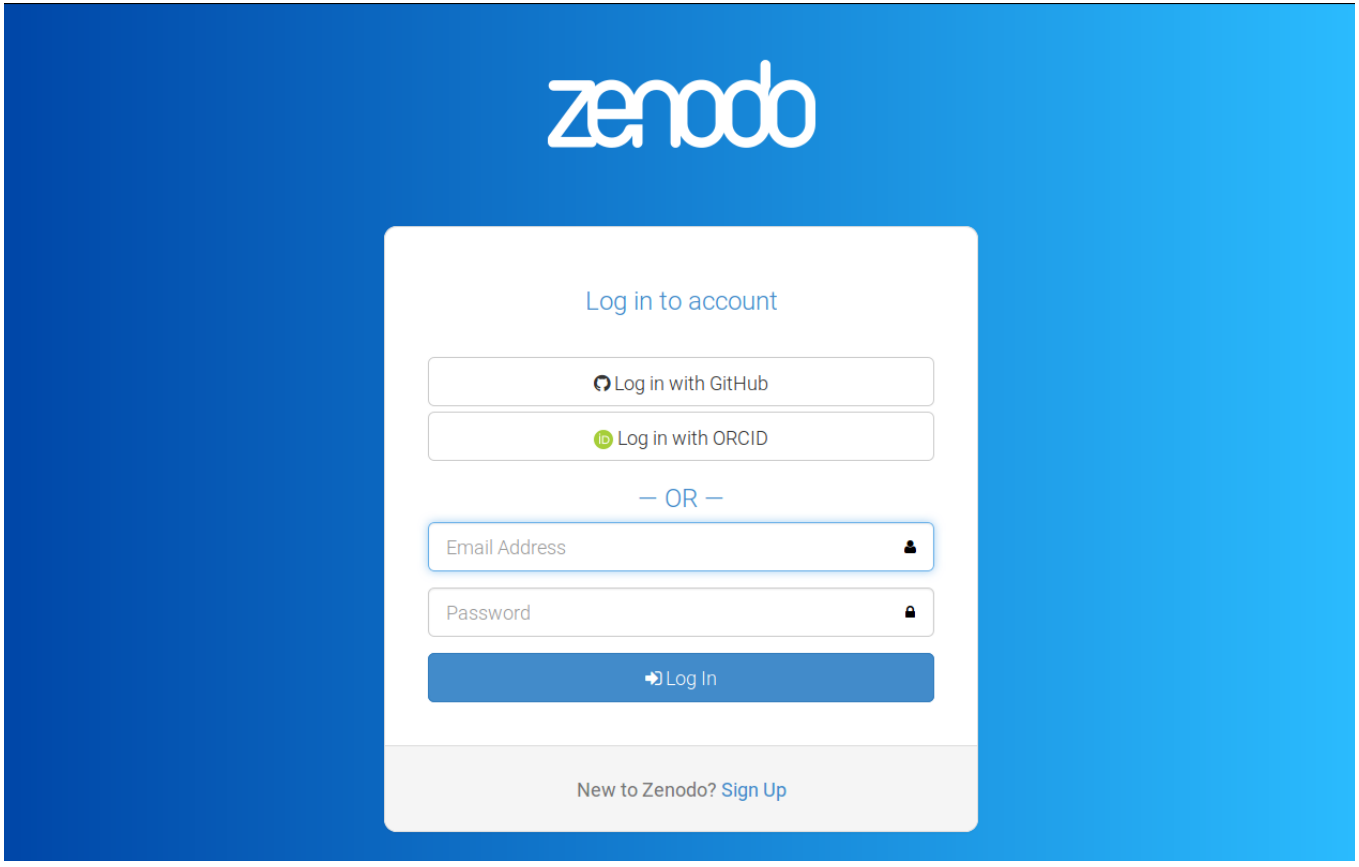
Reproducibility: **IF** same experiment
identical parameters
same dataset
same model
**THEN** same results

Traceability: all the elements used in the analysis/experiment:
accessible
properly described
uniquely identified

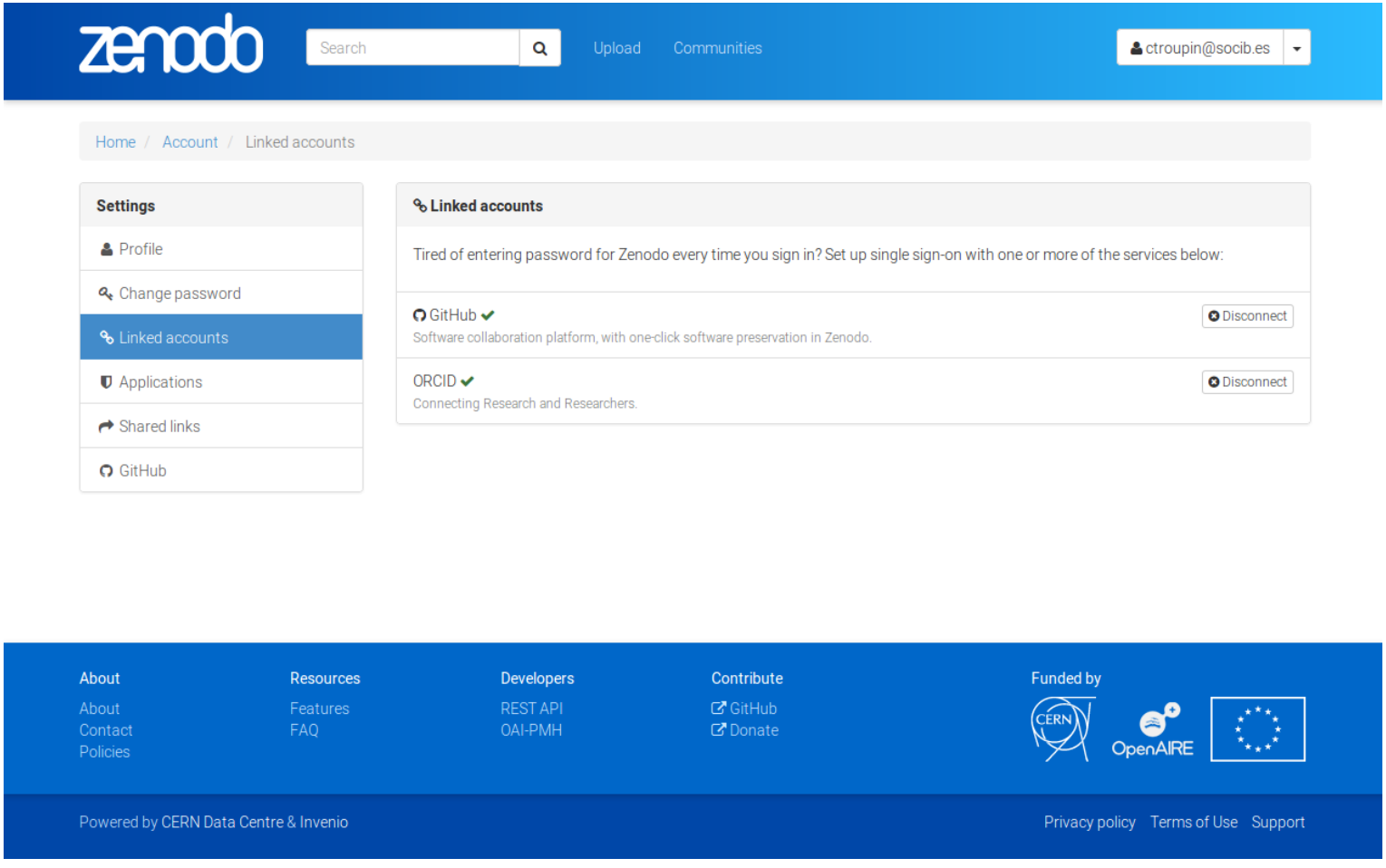
# *A closer look to Zenodo*

# Login: 3 options

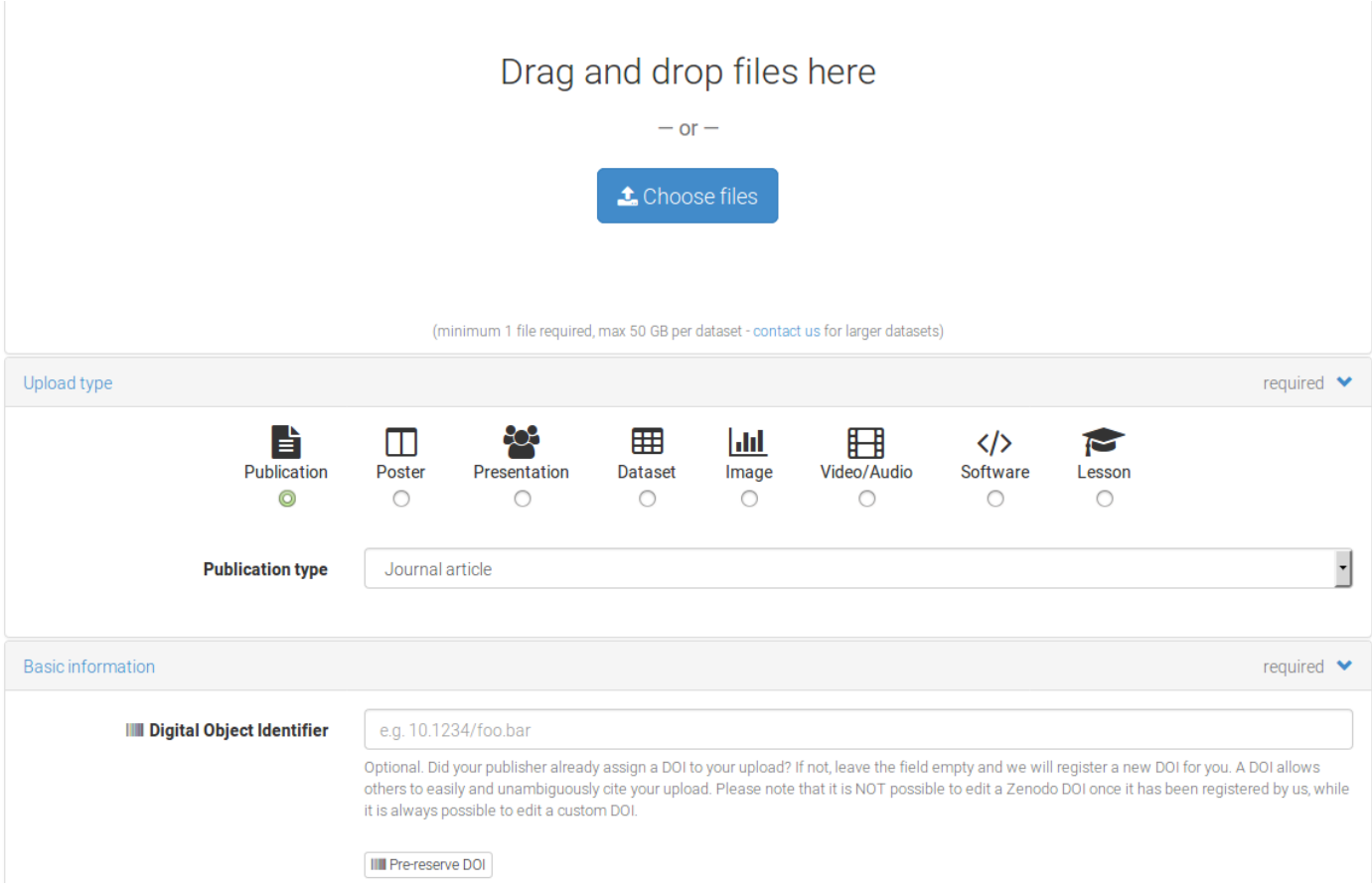
1. Use GitHub account
2. Use ORCID account
3. Create new user



# Main page: linked accounts



# Upload: you can drop anything




In particular: Software

(ok for stable code)

# Upload: add metadata

**Digital Object Identifier** 10.5281/zenodo.836727

Optional. Did your publisher already assign a DOI to your upload? If not, leave the field empty and we will register a new DOI for you. A DOI allows others to easily and unambiguously cite your upload. Please note that it is NOT possible to edit a Zenodo DOI once it has been registered by us, while it is always possible to edit a custom DOI.

Reserve DOI ✔

**Publication date** * 2017-07-31

Required. Format: YYYY-MM-DD. In case your upload was already published elsewhere, please use the date of first publication.

**Title** * gher-ulg/DIVA: v4.7.1

Required.

**Authors** *

| | |
|---|---|
| Sylvain Watelet | GHER, University of Liège |
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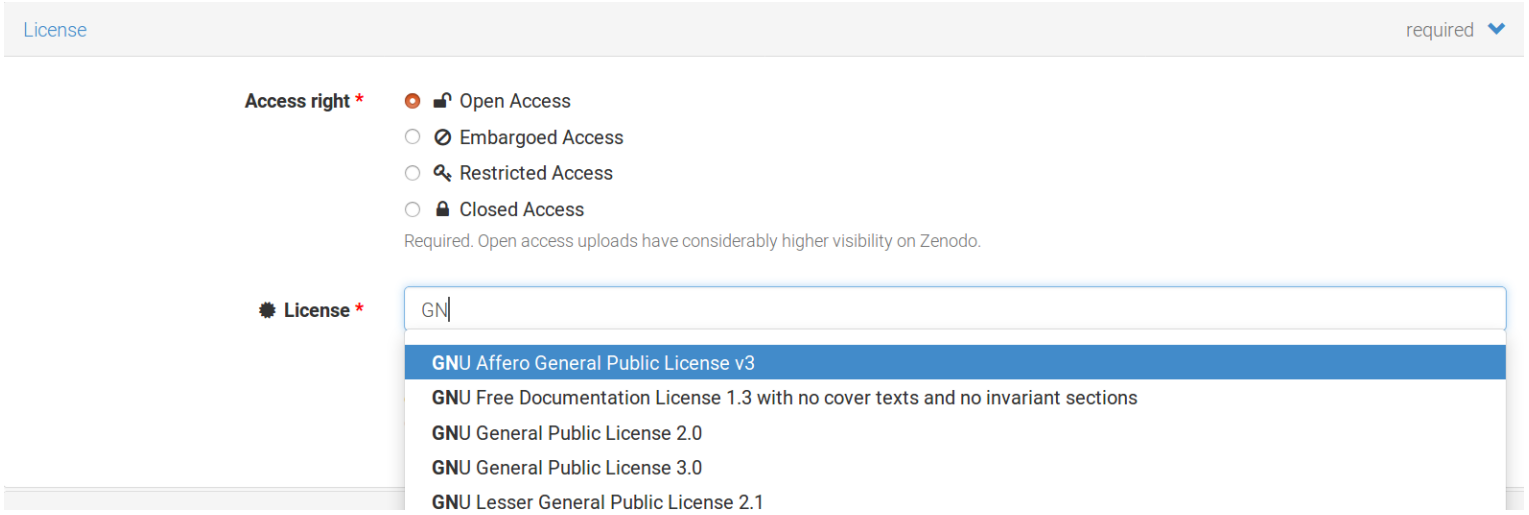
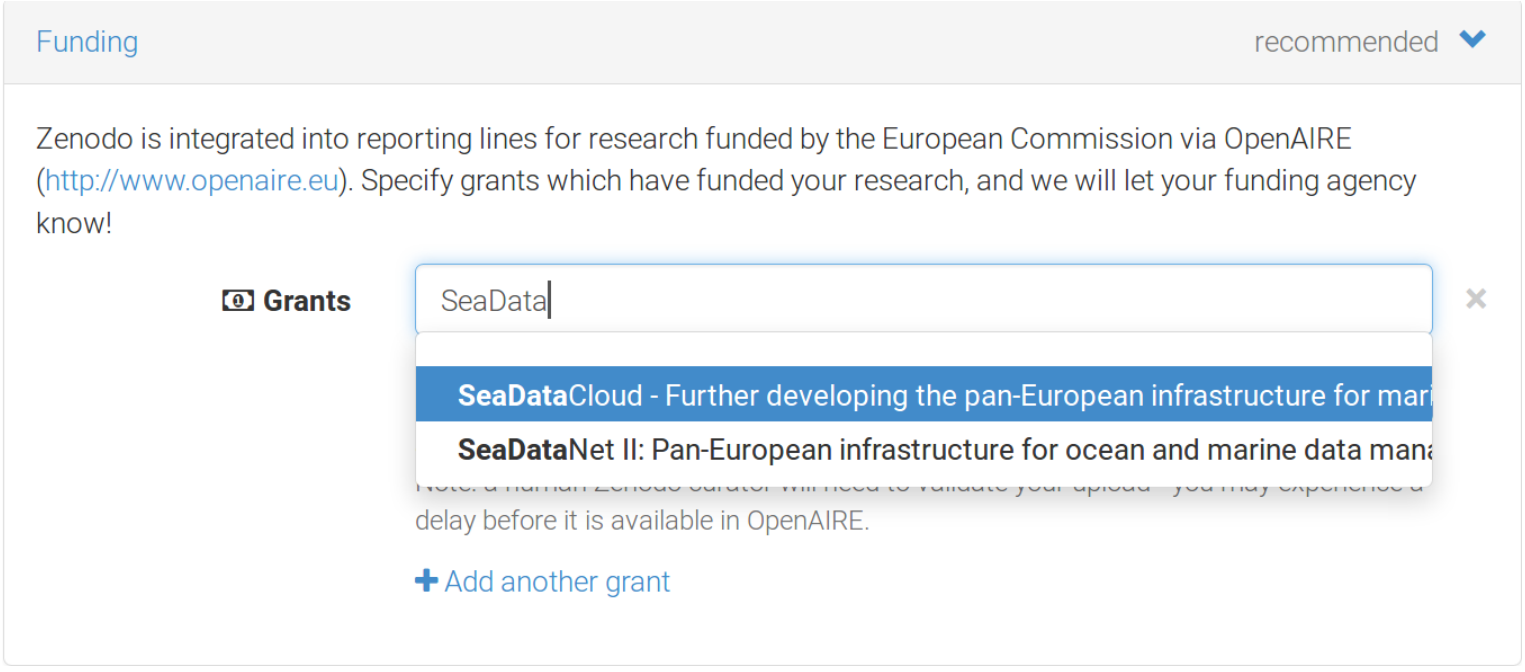
| Jean-Marie Beckers | GHER, University of Liège |
| Alexander Barth | GHER, University of Liège |
| Mohamed Ouberdous | GHER, University of Liège |

# Upload metadata: licence



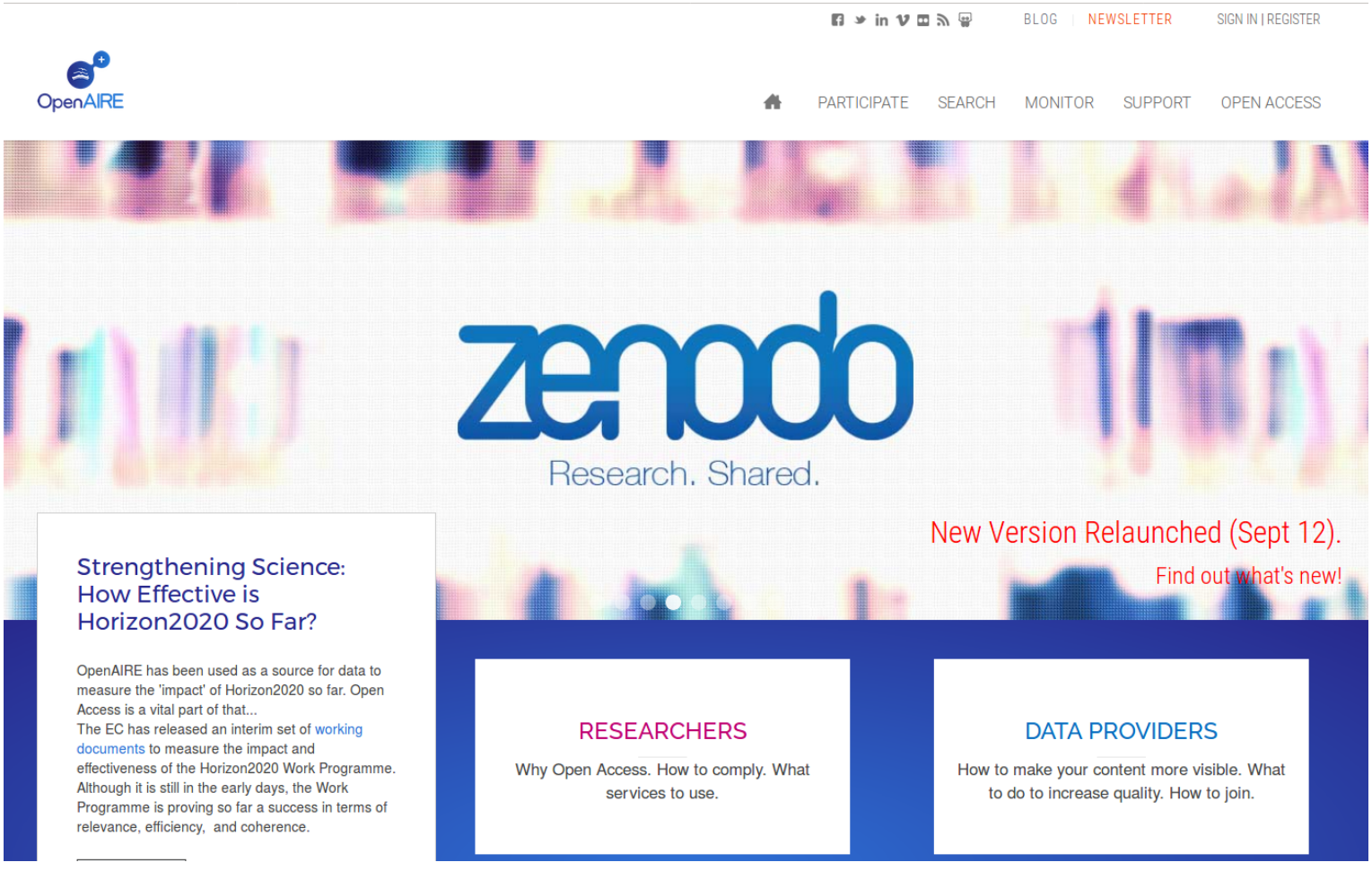

Not necessarily Open!

# Upload metadata: funding!




Common strategy for SeaDataCloud or ODIP tools?

# Upload metadata: funding!



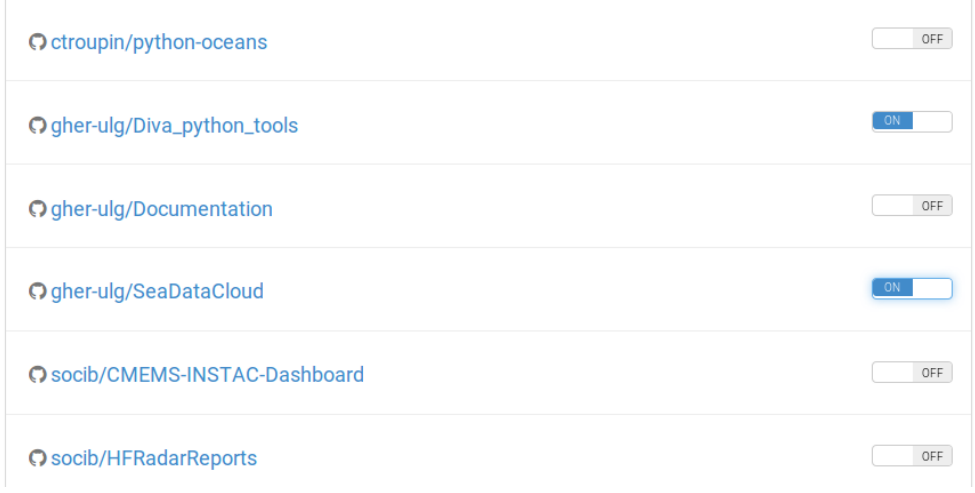

Common strategy for SeaDataCloud or ODIP tools?

# Upload: finish

# Zenodo & Github

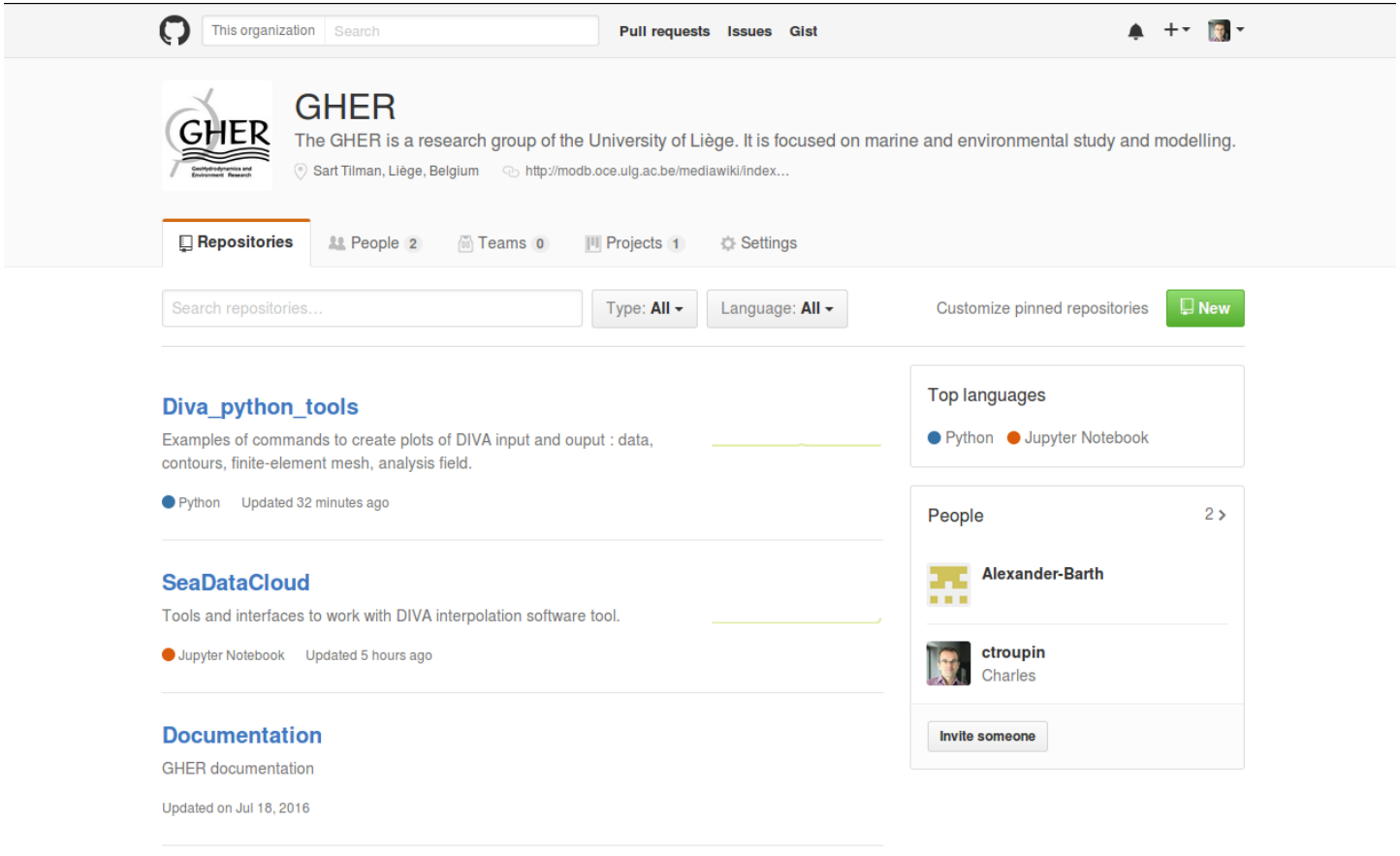
# Generating doi for software releases

Turning synchronisation ON for the selected repositories



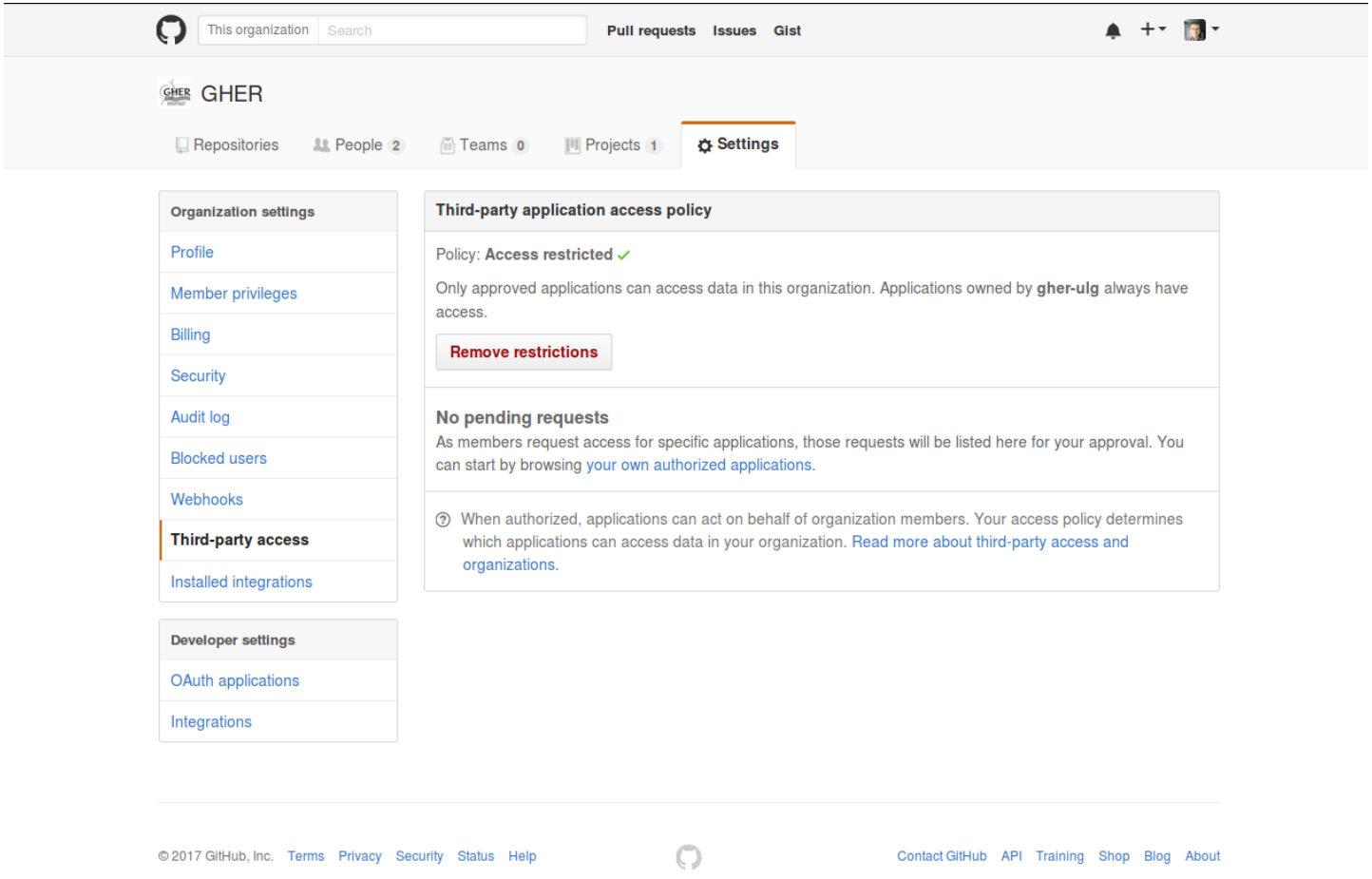
# Generating doi for software releases

## Go on your home page



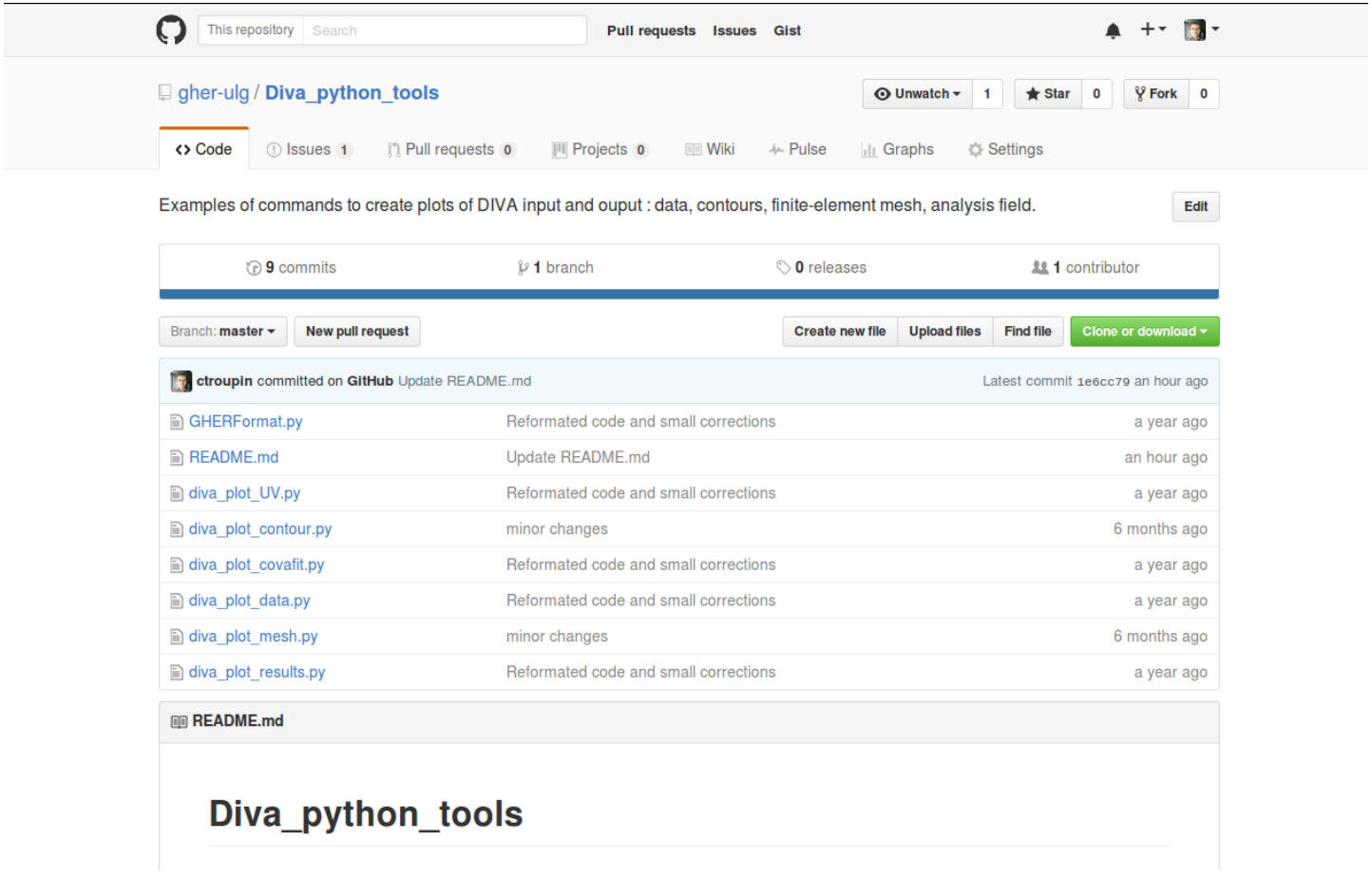
# Generating doi for software releases

## In settings: allow third-party access



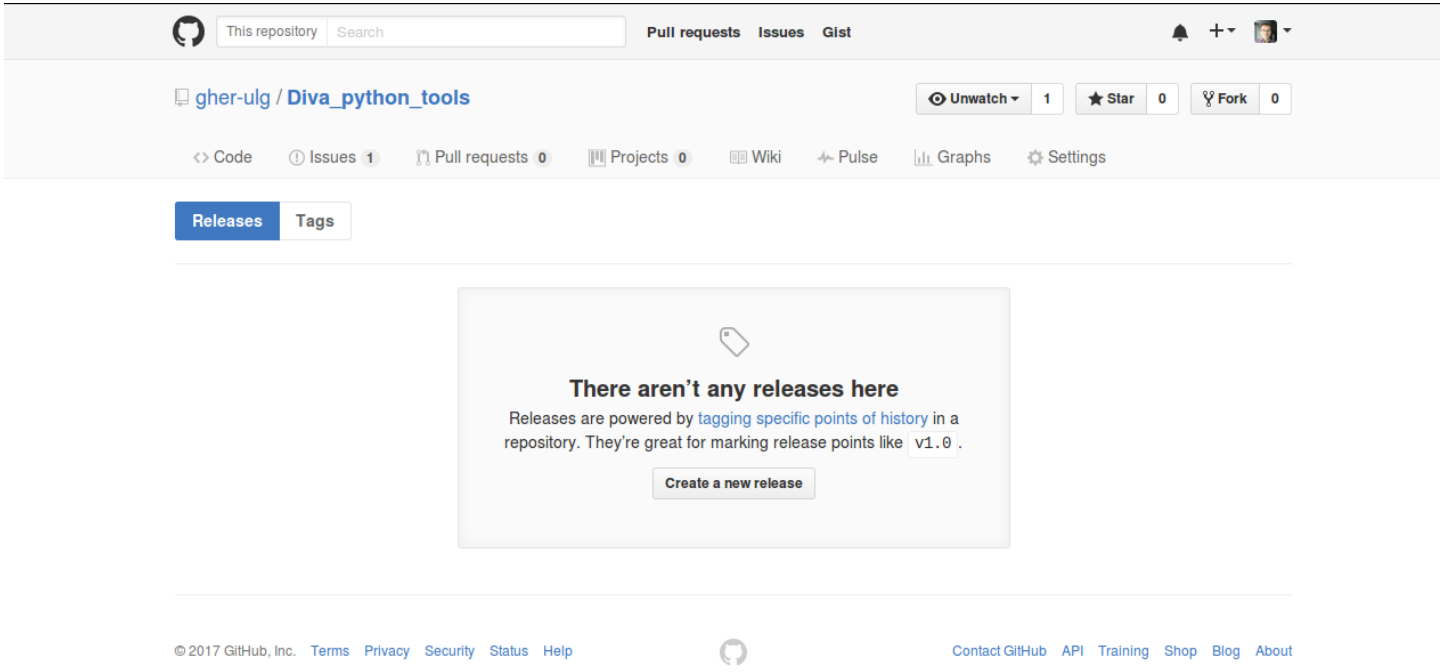
# Generating doi for software releases

## Open the project repository



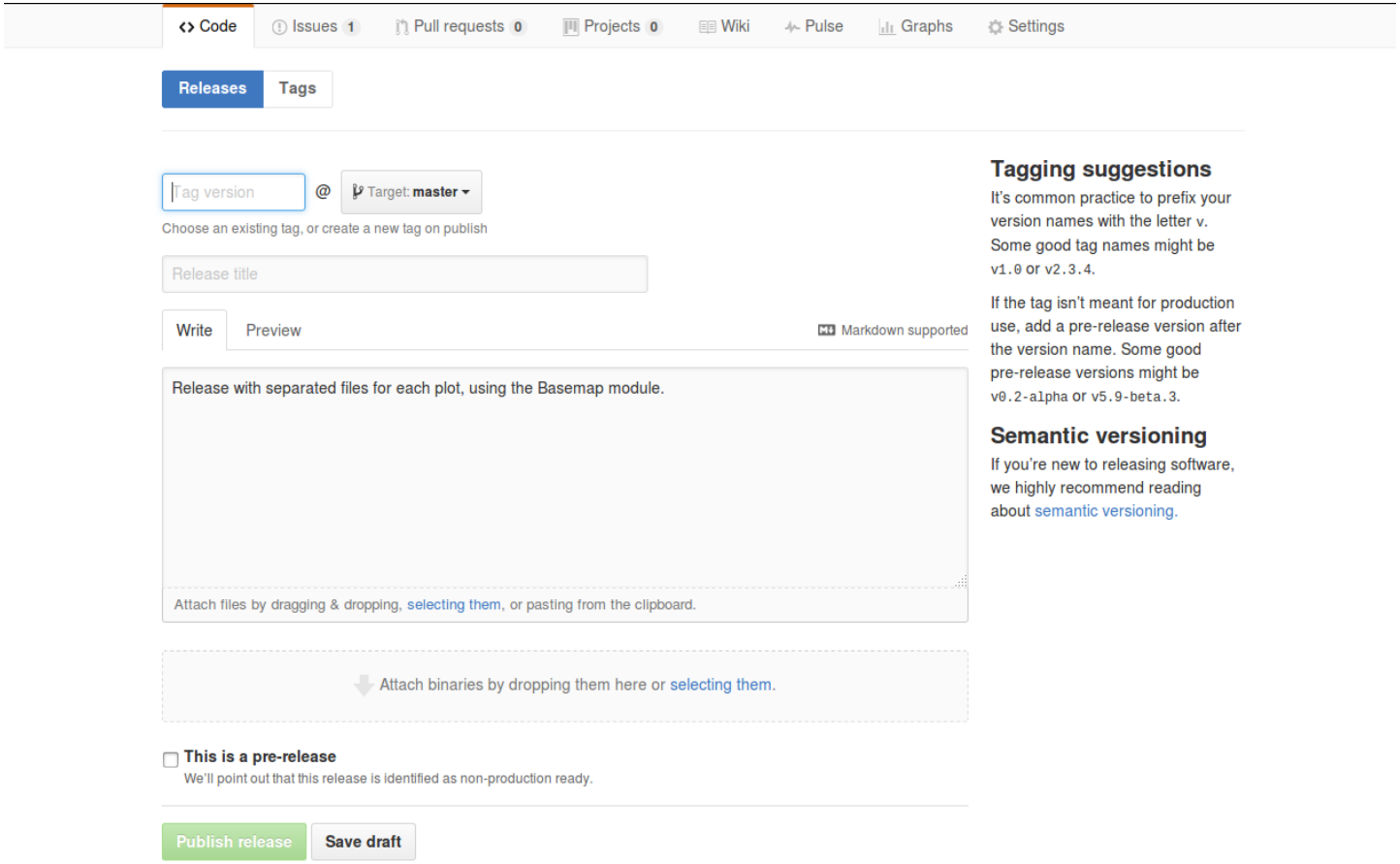
# Generating doi for software releases

Click on the *Release* button



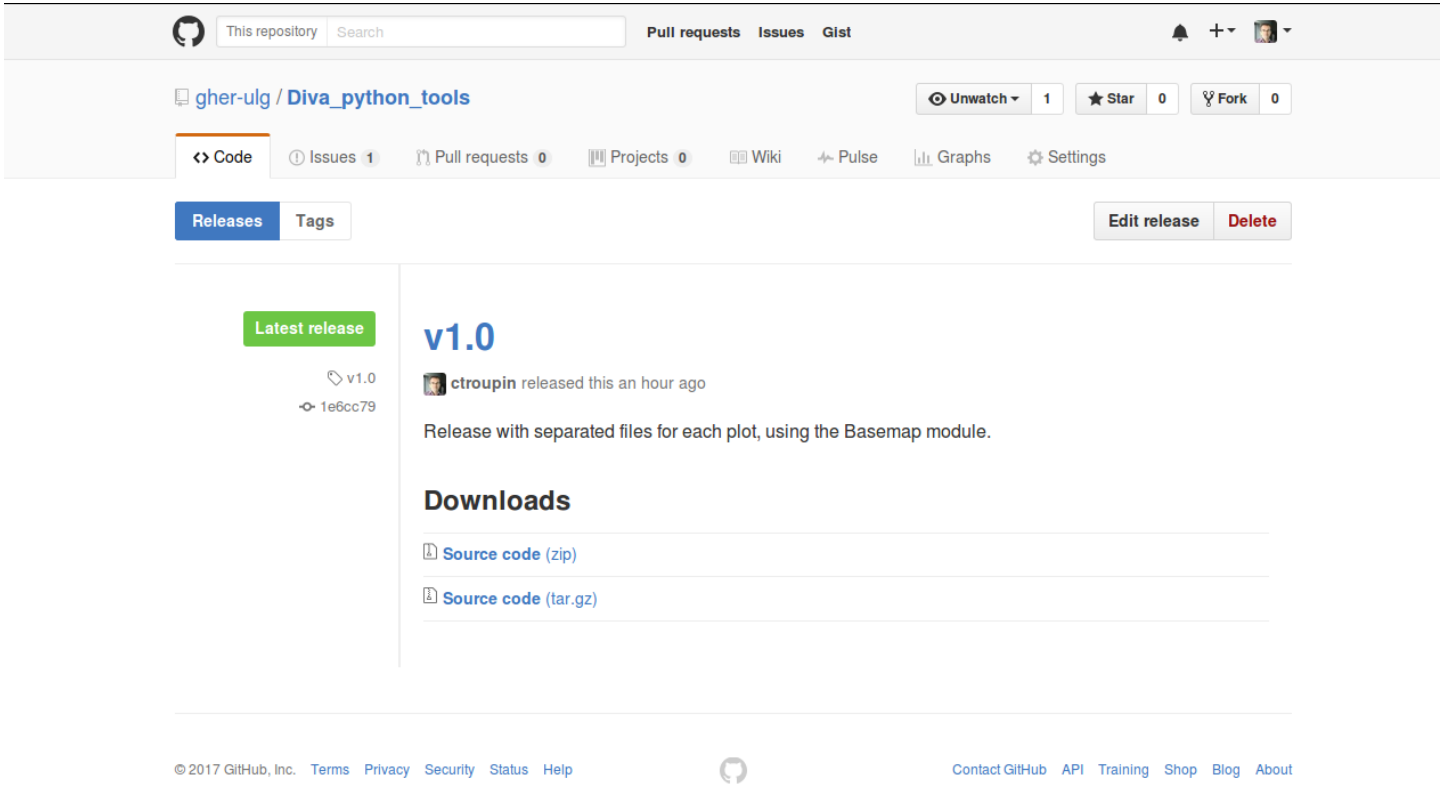
# Generating doi for software releases

Fill in the information and ...



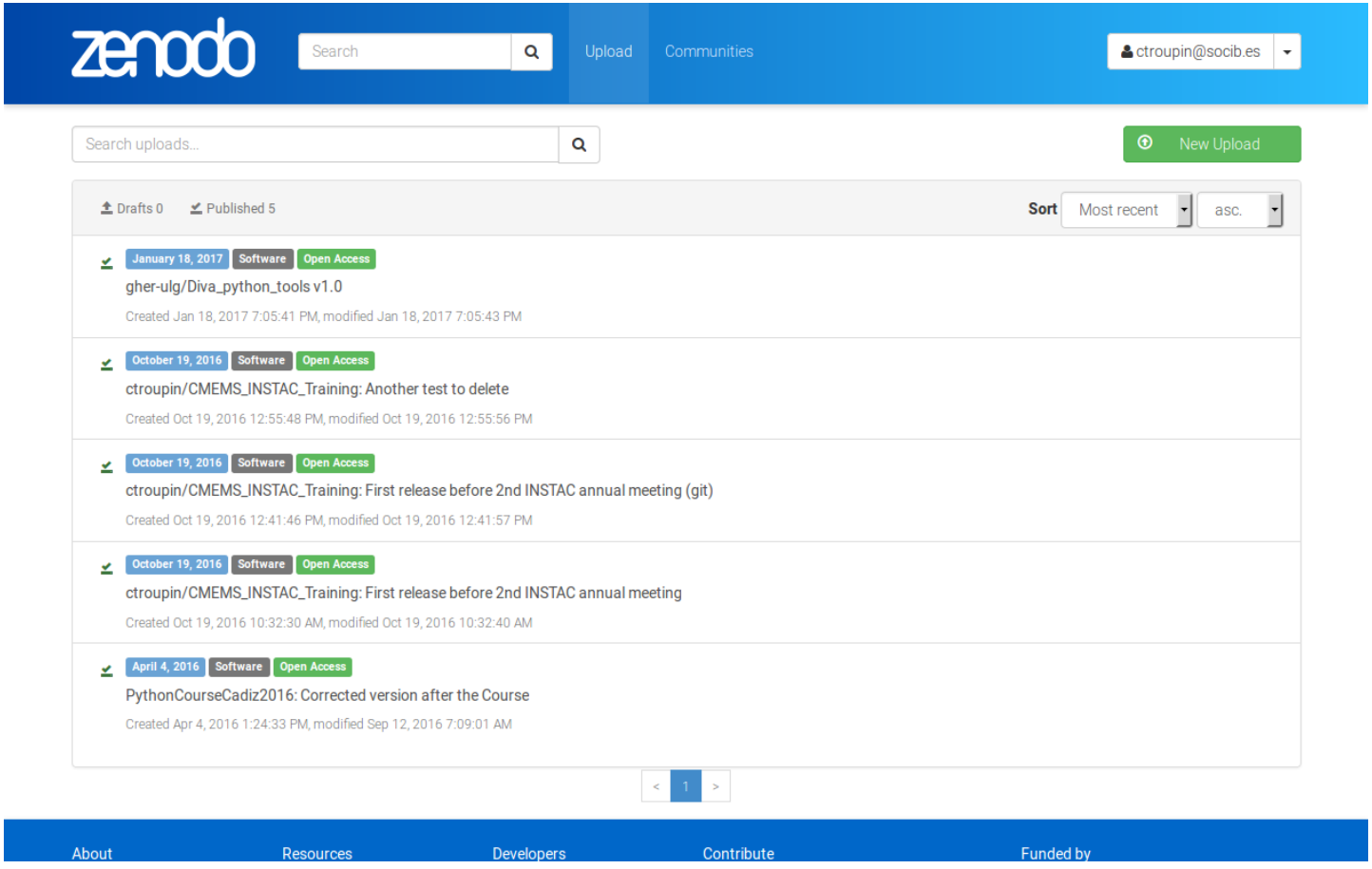
# Generating doi for software releases

...make the release



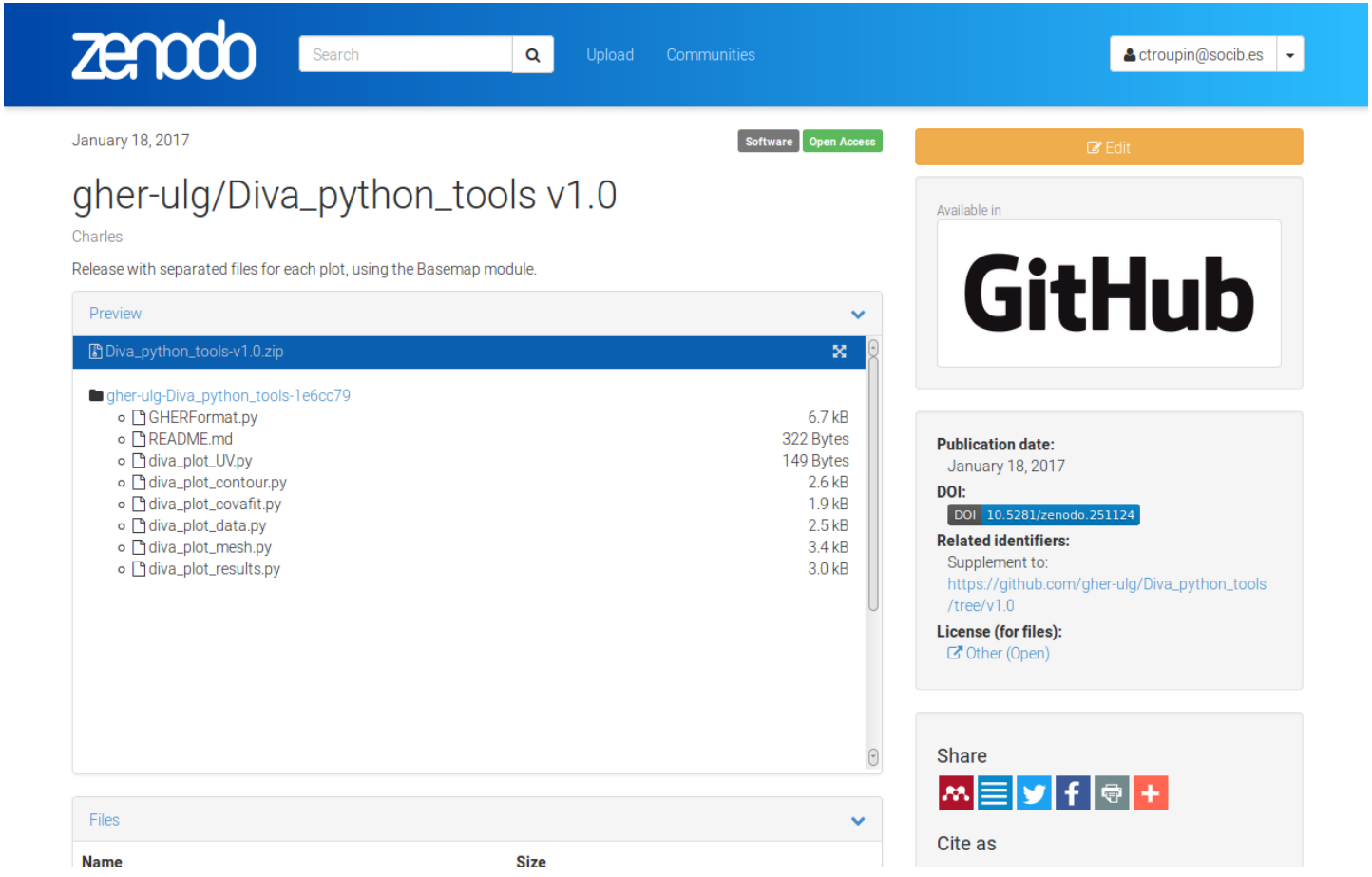
# Generating doi for software releases

Check the project release on Zenodo and ...



# Generating doi for software releases

...get the doi badge



# *Use case I*

get DOI for Diva releases

# Diva (simplified) development history

1990's: Variational Interpolation Method (Fortran 77)
only 2D interpolations

2006 SeaDataNet, code refactory and set of bash scripts

2007 with ODV

2008 code in Subversion (SVN), distribution through GHER web page

2009 new modules in Fortran 90
for loops over depth and time

2012 new error calculation technique

2017 switch from SVN to **git**, distribution via

# From SVN to Git and GitHub

**Easy way**

1. Create a new repository with the latest release of the code
2. Lose all the history of the changes, the previous releases and developing branches

# From SVN to Git and GitHub

**Hard/conservative way**

1. Git repository whose structure reflects that of SVN
   (trunk, branches, tags)
2. Use the `git-svn` bridge
   `https://git-scm.com/book/en/v2/Git-and-Other-Systems-Migrating-to-Git`
3. End up with a new GitHub repos with all the history

# Use-case: Diva releases

1. Switch from SVN to GitHub (conserving the history)

Resources:

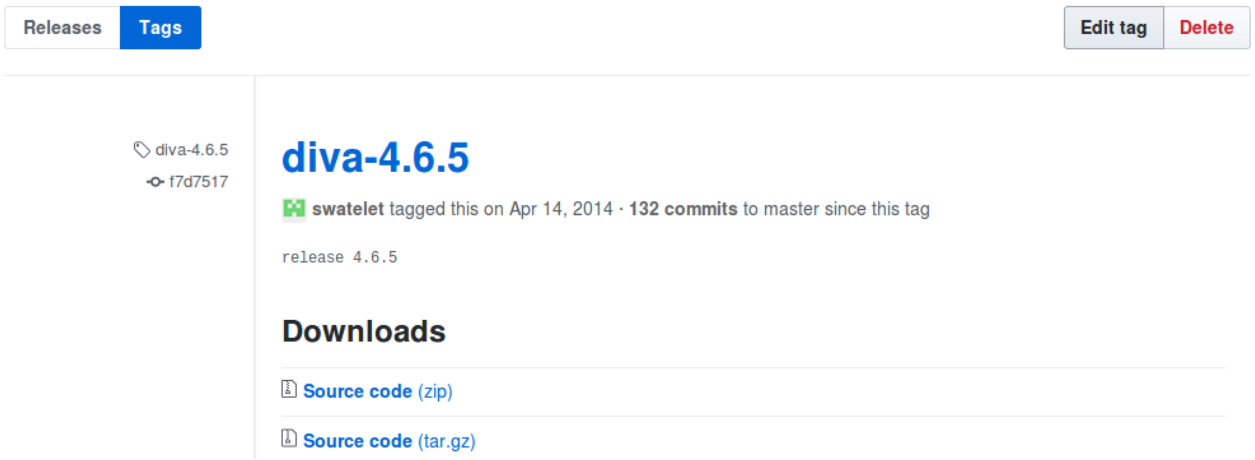
- https://git-scm.com/book/en/v2/Git-and-Other-Systems-Migrating-to-Git
- http://john.albin.net/git/convert-subversion-to-git
- https://www.atlassian.com/git/tutorials/migrating-overview

# Use-case: Diva releases

1. Switch from SVN to GitHub (conserving the history)
2. Enable Diva repository on Zenodo

# Use-case: Diva releases

1. Switch from SVN to GitHub (conserving the history)
2. Enable Diva repository on Zenodo
3. Edit the different *tags* on GitHub
   (otherwise DOI not generated)



# Use-case: Diva releases

1. Switch from SVN to GitHub (conserving the history)
2. Enable Diva repository on Zenodo
3. Edit the different *tags* on GitHub
   (otherwise DOI not generated)
4. To do? Include Diva corresponding DOI in product netCDF?

# Conclusions

1

# Conclusions

1

2

# Conclusions

1

2

3