

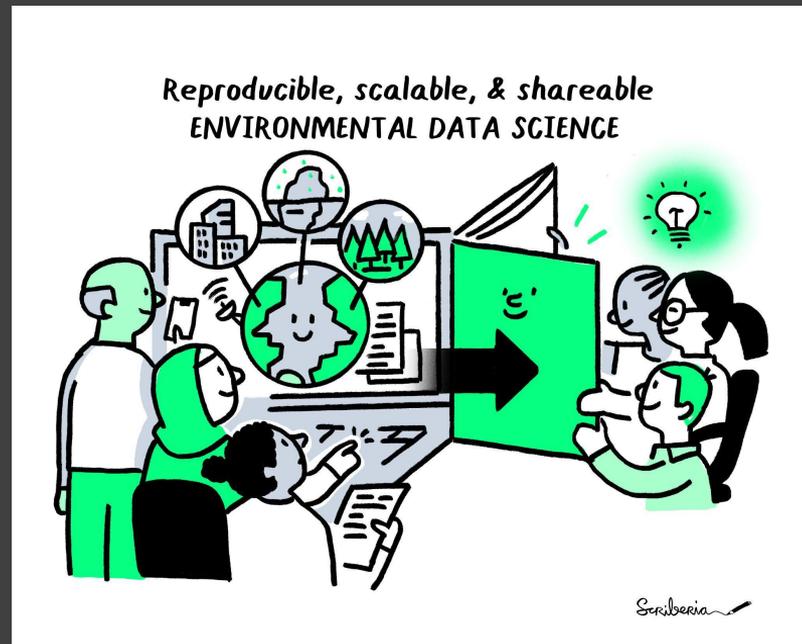
Environmental Data Science book:
a computational notebook community for
open environmental science

Alejandro Coca-Castro¹, Anne Fouilloux², Scott Hosking^{1,3} & EDS book community³
They/Their

¹The Alan Turing Institute, ²Simula Research Lab, ²British Antarctic Survey, ³Multiple institutions

EDS book

A living, free and open online resource to showcase and support the publication of data, research and open-source tools for collaborative, reproducible and transparent **Environmental Data Science**





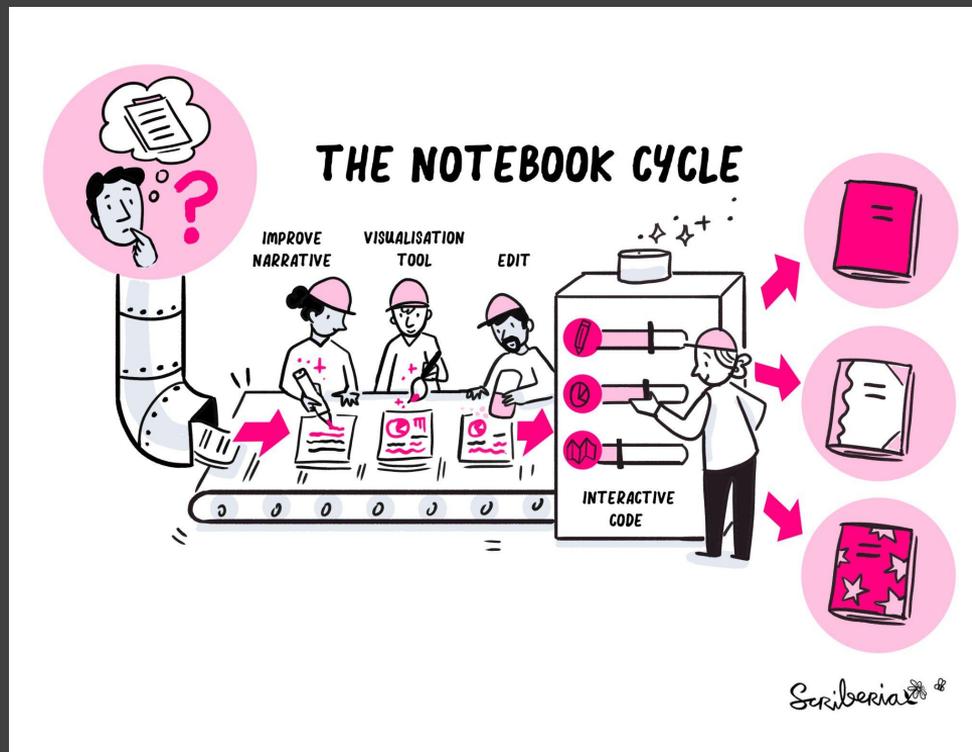
Mission

Educate and leverage good scientific software and data management practices among environmental scientists through peer-reviewed findable, accessible, interoperable and reusable (FAIR) executable notebooks

Vision

Environmental scientists work collaboratively to demonstrate and communicate their science through FAIR executable notebooks and have gained significant skills to publish in notebook-based scholarly publication systems

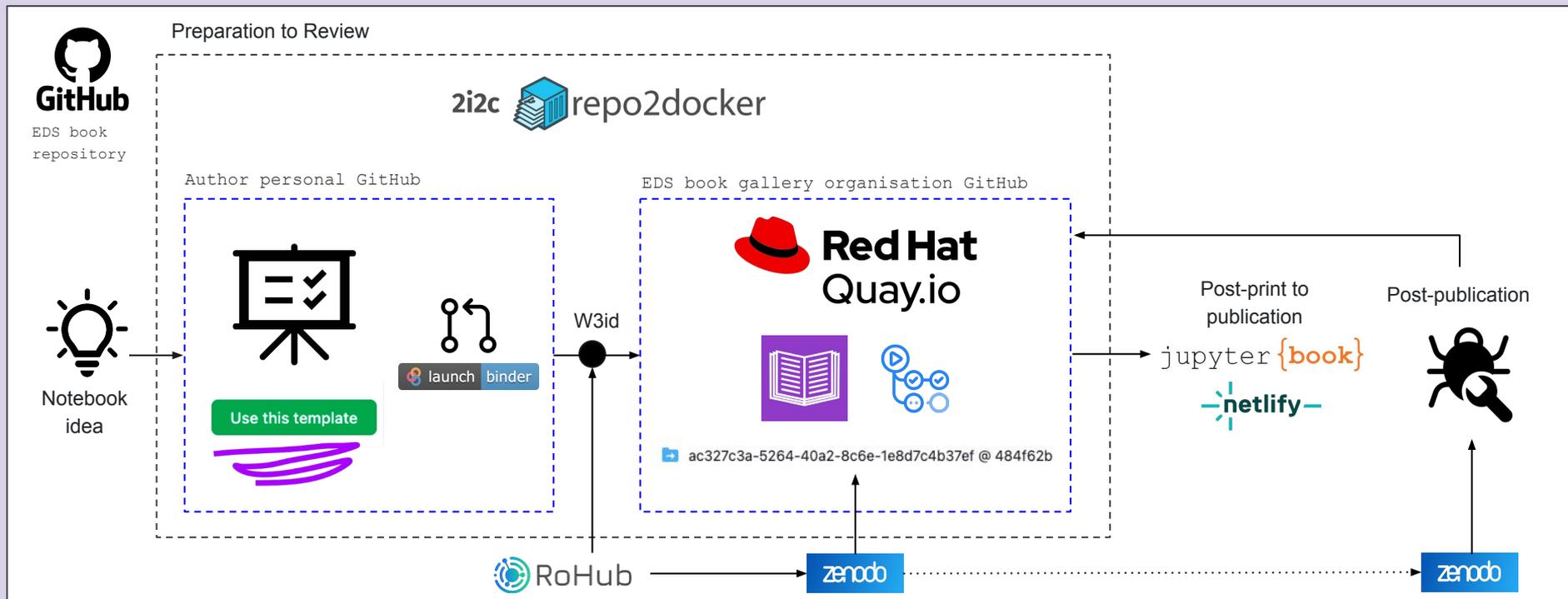
Motivation: Community-driven Notebooks Publication



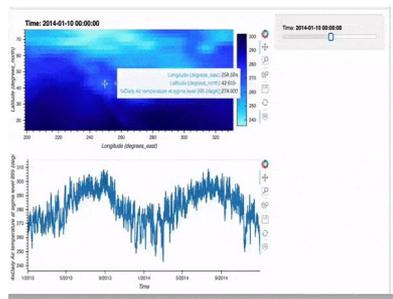
Publishing process: Stages and Roles

Stage	Where in GitHub	Authors	Reviewers	Editors-in-Chief	Editors	Community
Notebook idea	EDS book repo	✓		✓		○
Preparation	Notebook repo	✓		✓		
Prereview and Review* (similar to JOSS/JOSE)	EDS book & notebook repos	✓	✓	✓	✓	
Post-print	EDS book & notebook repos	✓	○	✓		
Publication	EDS book repo	○		✓		
Post-publication	Notebook repo	○		✓		✓

Open infrastructure: Current Publishing Workflow



Means



jupyter {book}



Open-source

Interactable

Findable

Reproducible

Gallery with FAIR notebooks

The screenshot shows the 'Gallery' page of the EDS book. On the left is a sidebar with navigation links: 'Welcome', 'PREAMBLE', 'About EDS book', 'Citation and Reuse', 'Contribute', 'NOTEBOOKS', 'Our Notebooks', 'Gallery', 'Usage', 'PUBLISHING', 'Our Guidelines', 'FAQ', 'COMMUNITY', 'Our Community', 'AFTERWORD', 'Bibliography'. The main content area is a grid of notebook thumbnails. Each thumbnail includes a title, a small visualization, and a set of tags (e.g., 'General', 'Exploration', 'Standard', 'Python') and interactive buttons for 'license', 'launch', 'binder', 'render', 'passing', and 'view'. The thumbnails are arranged in two rows of three. The first row includes 'Land Cover Data (Impact Observatory)', 'Cosmos-UK Soil Moisture (UKCEH)', and 'Rainfall NCEP/NCAR (NOAA)'. The second row includes 'Millington (2022)', 'Coca-Castro (2022)', and 'Lam et al. (2022)'. A third row of thumbnails is partially visible at the bottom, including 'Sea ice forecasting (IceNet)', 'Tree crown (DetectreeRGB)', and 'SEVIRI Level 1.5 (EUMESAT)'.



Title

Tags (Environment, Theme, Submission, Language)

license MIT launch binder render passing view review

RoHub FAIR Executable Research Object DOI 10.24424/7cde-g605

Context
purpose, highlight, contributions

Data

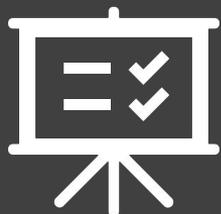
Analysis

Citation

GitHub Actions jupyter

Key achievements

10 



guidelines
templates



published
notebooks



persistent DOIs
(RoHub)

18 



community
& co-working
meetings

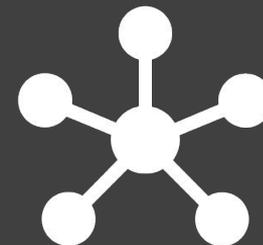
Activities in next months



Inform and monitor
software stacks health
across languages &
open-source
communities
(Python, Julia, R)



Joint community calls
with The Turing Way
`#environmental-sustainability`
and more co-working
activities (maintainers)



Partnerships with
environmental research
networks, open
education, OSS
developers and
publishing ecosystem

Get involved



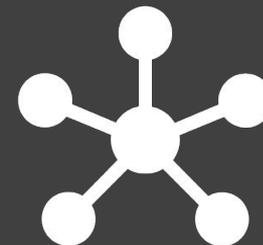
Inform and monitor software stacks health across languages & open-source communities (*Python, Julia, R*)

**Community Chapter >
Scientific Ecosystems**
(Issue #154)
e.g. *Holoviz Project Dashboard*



Joint community calls with The Turing Way
`#environmental-sustainability`
and more co-working activities (maintainers)

Community, 1st/3rd Wednesdays
Co-working, 2nd Friday



Partnerships with environmental research networks, open education, OSS developers and publishing ecosystem

NASA TOPS / Notebooks Now!
Climate Informatics
JupyterCon23

Play a part in the coming EDS book version 0.1.0 ([Issue #126](#))

Climate Informatics 2023 Organisers:



British Antarctic Survey

NATURAL ENVIRONMENT RESEARCH COUNCIL



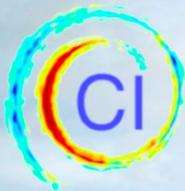
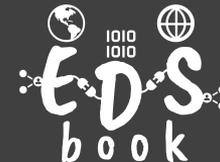
North Carolina
Institute for
Climate Studies



CAMBRIDGE
UNIVERSITY PRESS & ASSESSMENT

**The Alan Turing
Institute**

Challenge cloud
infrastructure by:



Climate Informatics[^]2023

~~April 19-21st~~ 1-31 May

~~University of Cambridge, UK~~

Reproducibility Challenge

Everywhere Online

Teams of 2-4 | 1 month | Reproducing a scientific paper | Authorship on a citable, DOI-tagged EDS book notebook

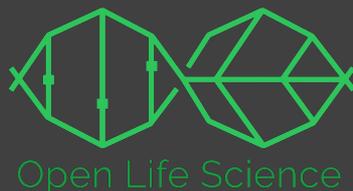
<https://cambridge-iccs.github.io/climate-informatics-2023/reproducibility-challenge>



Call to reviewers to be posted in the challenge website with **further partners & resources**

Big thanks!

Open Research Communities



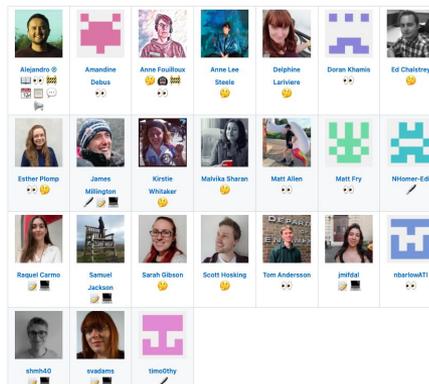
EDS book community

8 Authors

8 Reviewers

+Advisors/Contributors

10+ participants in
community/co-working
sessions



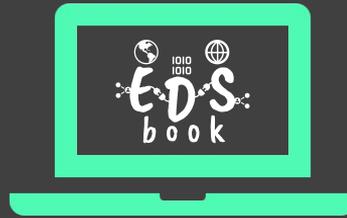
~2300 users
(visits since Dec'21)



Contribution and suggestions are welcome



@eds_book



<https://edsbook.org>



@EDSbook@fosstodon.org



[zenodo.org/communities/
the-environmental-ds-community](https://zenodo.org/communities/the-environmental-ds-community)



[alan-turing-institute/
environmental-ds-book](https://github.com/alan-turing-institute/environmental-ds-book)