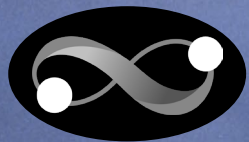


Communities and Next Generation Journals on DeSci Nodes

Prof. Dr. Philipp Koellinger



DeSci
Foundation



DeSci Labs

Challenges in Scientific Publishing and Peer-Review

- Market share of the 5 largest publishers increased from 55% (2000) to 85% (2023)¹
 - >\$12 billion revenue for scholarly articles in 2022²
 - Big 5 enjoy ~40% profit margins³
- Problematic business models
 - Pay-to-read creates access barriers for most people
 - Pay-to-write creates incentives for publishers to lower quality standards
- Scientists donate >\$1.5 billion to publishers in unpaid peer-review time
 - 75% of journal editors say finding reviewers is the hardest part of their job⁵
 - “Black box” & doubtful quality

1: Crotty (2023), “Quantifying Consolidation in the Scholarly Journals Market,” Scholarly Kitchen, 30 Oct 2023.

2: Simba Information (2024), “Global Scientific & Technical Publishing 2023-2027.”

3: Lariviere, V. et al (2015), “The Oligopoly of Academic Publishers in the Digital Era,” *PLoS ONE* 10(6): e0127502.

4: Aczel et al. (2021), “A Billion-Dollar Donation: Estimating the Cost of Researcher’s Time Spent on Peer Review,” *Research Integrity and Peer Review* 6(14).

5: Publons (2018), “Global State of Peer Review,” <https://doi.org/10.14322/publons.GSPR2018>

What is needed

- Journals that are owned by the scientific community
- Alternative business models
 - No APC
 - No pay-walls
 - Rewarding high-quality validation & curation of science
- Greater transparency around peer review
 - What exactly was evaluated
 - Needs to be part of the scholarly record
- Rewarding referees for fast, high-quality work

DeSci Labs infrastructure for scientific communication

- DeSci Nodes (nodes.desci.com)
 - No paywalls, no publication charges
 - Open-state peer-to-peer storage network based on IPFS
 - Data sovereignty
 - Rich, versionable research objects
 - Free persistent identifiers for each research object and each file
 - FAIR by design - Findable Accessible Interoperable Reusable
 - Attestations highlight and validate characteristics of a research object
 - Programmatic publishing with nodes-lib library
 - Communities review, validate, and curate research objects in their feeds on the Nodes app
 - Open-source software (AGPL 3.0 license)

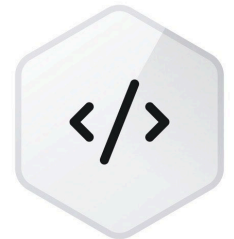


Attestations



- Verifiable claims about the characteristics of a research object
 - Claimed by author(s)
 - Verified or rejected during the peer-review process
 - Each claimed attestation has a unique persistent identifier linked to the research object
- Defined and used by communities/journals
 - Structured peer-review
- Claiming an attestation opens a dialog between authors and referees
 - Within the context of the research object
- Open vs. protected attestations
 - Open attestations can be validated by anyone
 - Protected attestations can only be validated by specific members of a community/journal





Open Data

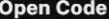


Open Code


A Weighted Cellular Automata for Flood Modelling V3 CURRENT
Share



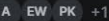



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Digitally-shareable code is available in this research object.

The code must be provided in a format that is time-stamped, immutable, and permanent. It must also have associated persistent identifiers.


...see more


ALL REVIEWERS >




AV Andre Vacha **AUTHOR**

I've uploaded two sets of code files needed to inspect this work: src, containing the classes of the simulation itself, and Simulations.ipynb, which imports and runs these in the notebook.




SI Sina Iman

I reviewed Simulations.ipynb, it seems as though many sites aren't flooding because of cells having an elevation of -999m - sudden drops like this aren't possible in the real world, and are likely a map labelling convention for water bodies such as oceans or seas. Check this and let me know.



PK Philipp Koellinger

Please feel free to submit your work to the DeSci Foundation feed on Nodes. At first glance, it looks like your work fulfills our validation and curation requirements.



EW Erik Van Winkle


Code seems to be available. Author should add proper metadata and licenses to .ipynb files.

Sign in to leave a review

A Weighted Cellular Automata for Flood Modelling

DPID://180

AV Andre Vacha SI Sina Iman



Simulations Notebook

<> Simulations.ipynb

VIEW COMPONENT →










Figure 1

Figure 2

<> Simulations Notebook


<> Simulation Code +1

Description

V3 CURRENT

This study introduces a novel flood simulation framework, termed WeightedCA, which extends the CA2D model by incorporating weight-based transition rules for simulating flooding over surface terrains. The model is quasi-physical, leveraging simple shallow-water equations and a weighting system to expedite simulation processes. Through the application of this model to the Kerala state in India, known for its heavy monsoon rainfall and predominantly sea-level terrain, we demonstrate the model's cap

...see more



Attestations on author's ORCID record

Associations between common genetic variants and income provide insights about the socio-economic health gradient

2024-05-21 | Data set | *Author*

[Show more detail](#)

URI: [Open Data Root https://dev-beta.dpid.org/149/v5](https://dev-beta.dpid.org/149/v5)

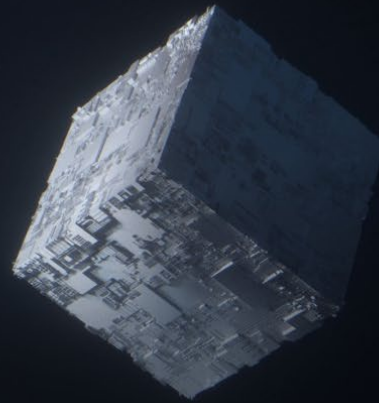
Part of URI: <https://dev-beta.dpid.org/149/v5/attestation/434>

CONTRIBUTORS: Philipp Koellinger; Daniel J. Benjamin; Ronald de Vlaming; W. David Hill; Abdel Abdellaoui; K. Paige Harden; A. Okbay; Tim Morris; Qiongshi Lu; Karlsson Linnér, Richard et al.

Source:  Nodes

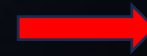
Communities – Use Cases

- Support infrastructure for journals
 - Journal of Risk Sciences
- Community feedback on early-stage research
 - The Behavioral Geneticist
- Organizations showcasing their research
 - E.g. BlockScience



Autonomous Research Communities

Power your journal with the open science infrastructure of tomorrow

[Create Community](#)[Explore](#)**DeSci Foundation**

Scientific Advances

[SUBMIT YOUR RESEARCH](#)[3 CURATED NODES](#) [52](#)

All selected contributions can participate in the **DeSci Fund for Scientific Innovation**. Outstanding contributions that demonstrate or advance best open science practices are eligible to compete for the DeSci Foundation Open Science Award.

Aims and Scope

Founded by the DeSci Foundation, our first mission is to create a platform for open science, where researchers can share their work and collaborate on projects.

[...see more](#)[descifoundation.org](#)[Original Research](#)[Open Science](#)[Reproducibility](#)[DeSciFoundation](#)[Metascience](#)[Interdisciplinary](#)[Curated Nodes \(3\)](#)[Radar \(9\)](#)

3 CURATED NODES

DeSci Foundation validates all nodes by ensuring that every claimed attestation has been confirmed by at least one independent reviewer.

Validated Attributes

[OPEN ATTESTATIONS](#)

Scientific Manuscript

Contains an open access scientific manuscript. The manuscript follows common scientific conventions and features a title, abstract, contributor names, body of text, and bibliographic section at the end.



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Journals

- In development
 - ETA of Beta version Q4/2024
- Capabilities
 - Editorial management system
 - Auto-suggestion of suitable reviewers
 - DOIs for the version of record
 - Indexing capabilities for CrossRef, Google Scholar, Dimensions, Scopus, Web of Science
 - Run on your own hardware or choose hosted solution
- Optional participation in DeSci Labs incentive layer

Design principles – DeSci incentive layer

- Goal: Create a market mechanism that incentivizes high-quality validation and curation services for scientific content
 - An alternative to paywalls and APCs
 - Solve the free-riding problem of peer-review
 - No rewards → Hard to find referees (long waiting times, low quality)
- Resistance to strategic behavior/abuse
- Plurality of value/quality definitions should be possible
 - Open playground for mechanism design
- Opt-in

Enabling a token economy for peer review

- Codified reciprocity
 - Get tokens for performing fast, high-quality peer review
 - Give tokens for requesting peer review
 - No money needed
- New participants receive a small token endowment the first time they do something valuable
 - Equal starting conditions for everyone
- Journals & communities define prices for the attestations they require
- Markets enable specialization

Prof. Dr. Philipp Koellinger

philipp@desci.com

DeSci Nodes

nodes.desci.com

Future of Science Seminar & Podcast

<https://descifoundation.org/seminar>



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