Open Science Support Centre

... in 15 minutes

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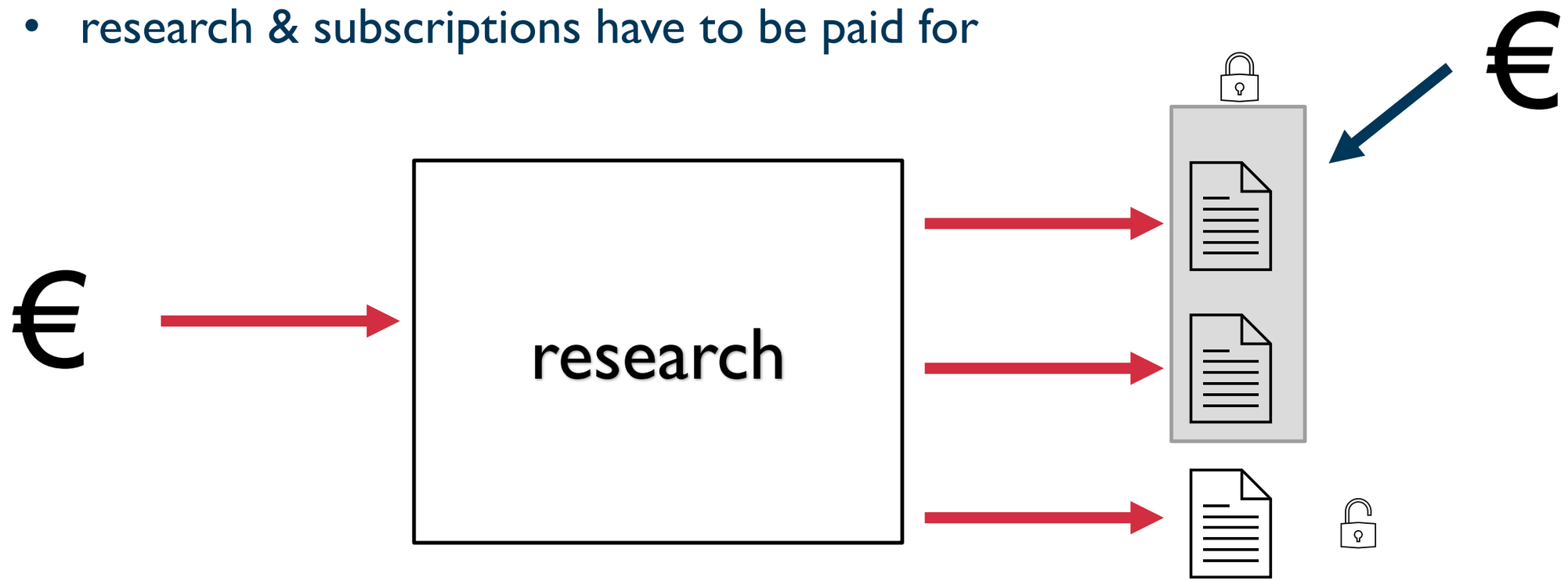
https://openscience.cuni.cz/
(cze & eng)

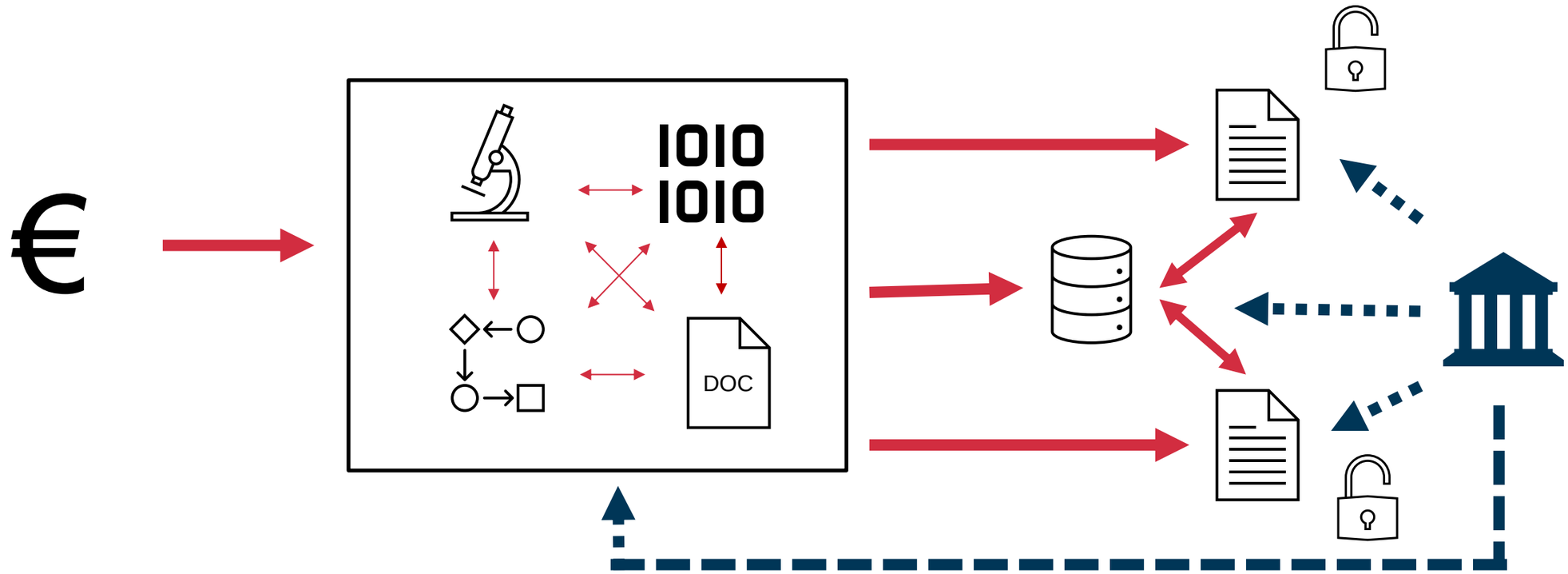
Open Science (in short)

- getting from this:
  - article as THE result of scientific activity
  - research & subscriptions have to be paid for



Open Science (in short)

- to this:
  - many different outputs
  - support from institution (infrastructure & other forms)



Open Access

Open Access - gold

- Gold OA (pay for publishing OA):
  - transformative agreements
    - supporting shift of traditional journals (subscription) towards OA
      - ... it should... but...
      - we got some “tokens”
    - https://openscience.cuni.cz/OSCIEN-153.html

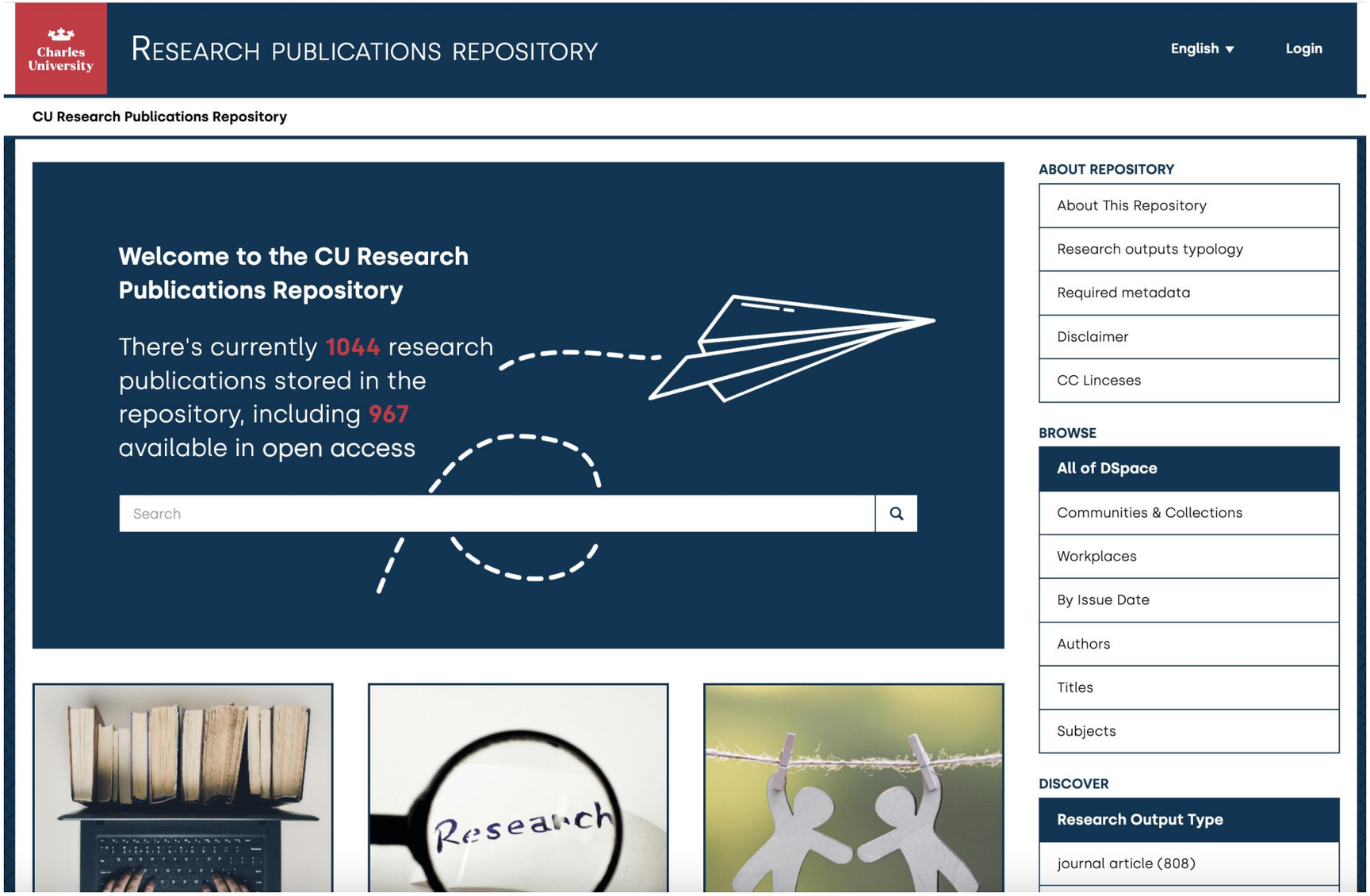
ACS | AIP | ACM | CUP | IOPscience | Karger | LWW | OUP | RSC | SAGE | SCOAP3 | Springer Nature | Taylor & Francis | Wiley

The number of remaining tokens is available on our website (updated as of 06. 05. 2025):

- **Lippincott Williams & Wilkins** - 0
- **Springer** – 71
- **Taylor & Francis** - 18
- **Wiley** – 87

Open Access - green

- Green OA (autoarchivation):
  - institutional repository was created https://publications.cuni.cz/
  - repository (DSpace) directly connected to CRIS system (OBD)
    - full texts loaded into OBD (as part of publications reporting)
    - ... and are automatically transfered into repository
    - → there is just one point of authority (OBD) + presentation in DSpace
  - licensing is very important



https://publications.cuni.cz

Assessing the role of selected constraints in Bayesian dynamic source inversion: application to the 2017 M-w 6.3 Lesvos earthquake

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Abstract
A dynamic finite-fault source inversion for stress and frictional parameters of the M-w 6.3 2017 Lesvos earthquake is carried out. The main shock occurred on June 12, offshore the southeastern coast of the Greek island of Lesvos in the north Aegean Sea. It caused 1 fatality, 15 injuries, and extensive damage to the southern part of the island. Dynamic rupture evolution is modelled on an elliptic patch, using the linear slip-weakening friction law. The inversion is posed as a Bayesian problem and the Parallel Tempering Markov Chain Monte Carlo algorithm is used to obtain posterior probability distributions by updating the prior distribution with progressively more constraints. To calculate the first posterior distribution, only the constraint that the model should expand beyond the nucleation patch is used. Then, we add the constraint that the model should reach a moment magnitude similar to that obtained from our centroid moment tensor inversion. For the final posterior distribution, 15 acceleration records from Greek and Turkish strong motion networks at near regional distances (approximate to 30-150 km) in the frequency range of 0.05-0.15 Hz are used. The three posterior distributions are compared to understand how much each constraint contributes to resolving different quantities. The most probable values and uncertainties of individual parameters are also calculated, along with their mutual trade-offs. The features best determined by seismograms in the final posterior distribution include the position of the nucleation region, the mean direction of rupture (towards WNW), the mean rupture speed (with 68 per cent of the distribution lying between 1.4 and 2.6 kms(-1)), radiated energy (12-65 TJ), radiation efficiency (0.09-0.38) and the mean stress drop (2.2-6.5 MPa).

Keywords
Earthquake dynamics, Waveform inversion, Probability distributions

Permanent link
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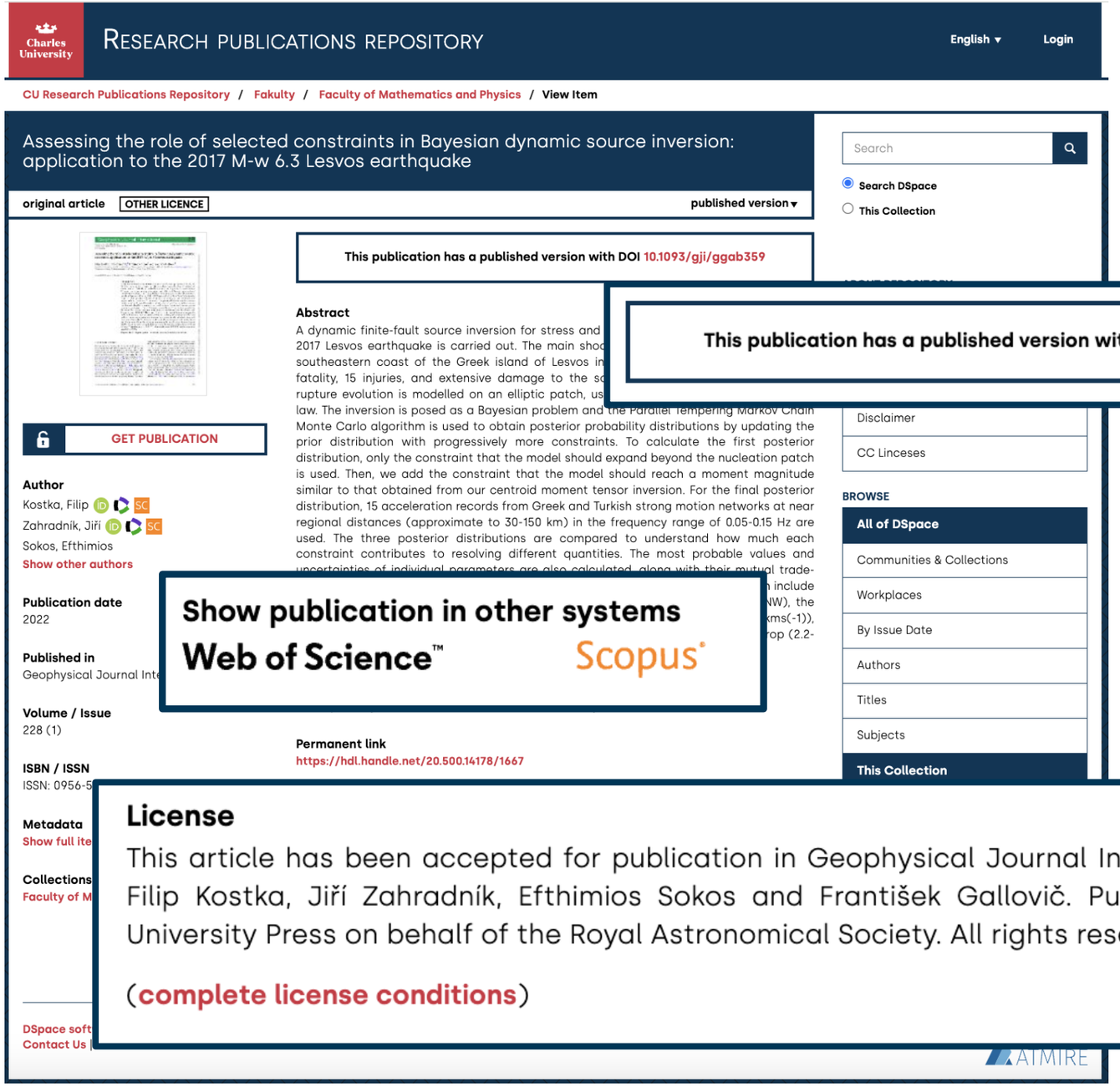
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Research Data

~~Open Data~~ → FAIR & RDM

- open data are too scary for many domains
  - FAIR principles, „as open as possible, as closed as necessary“

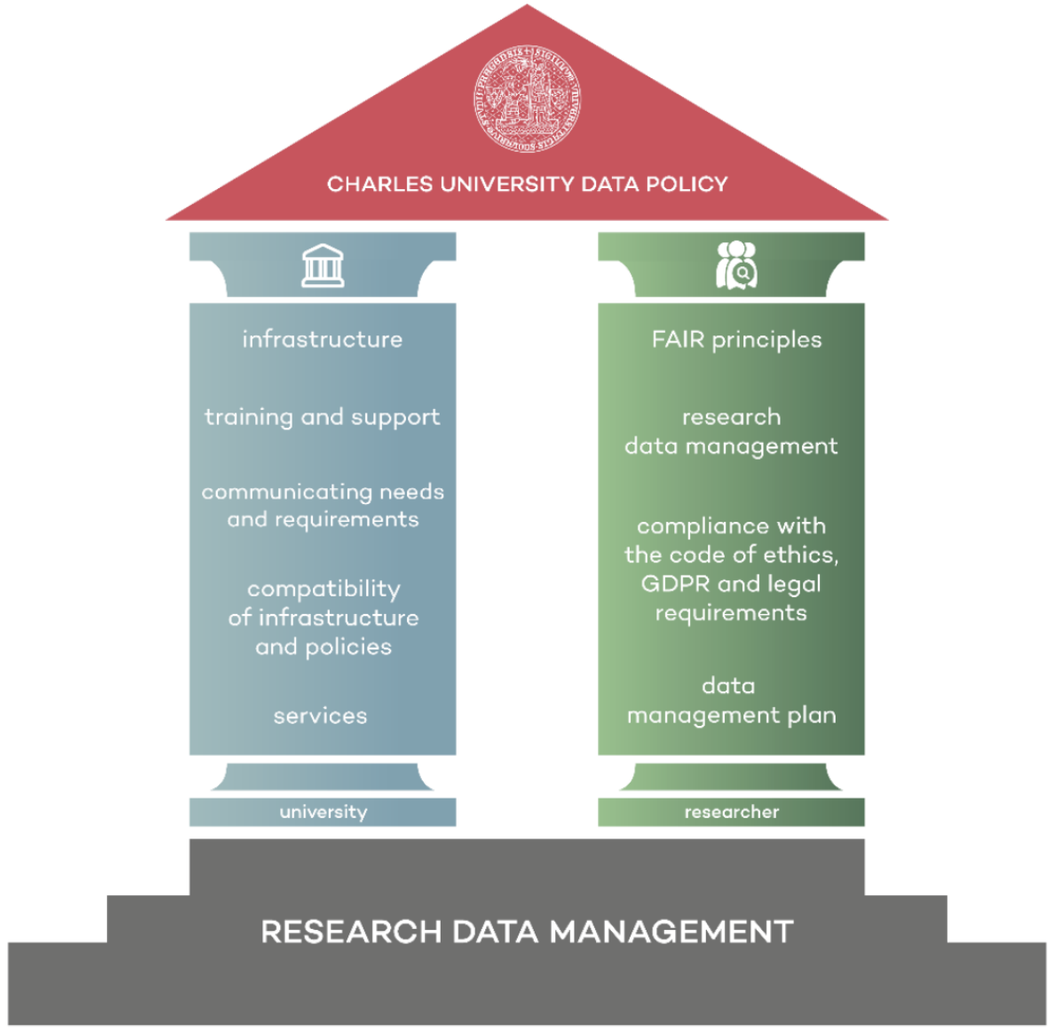
- our goal is to create a institutional repository (= final version of data)
  - general repository, controlled by CU
    - so.. domain repository may still be better for your data... if it exists!
  - data repository is work in progress

  - But how to avoid „garbage in, garbage out“ problem?
    - users who don‘t manage their data properly will struggle to fill repository with relevant content
    - => we need to help researchers with that

Research Data Cycle

Charles University Research Data Policy

1. Preamble
2. Definitions
3. Aim
4. Scope
5. Basic principles
    - 5.1. Data collection and storage
    - 5.2. Data preservation
    - 5.3. Data sharing
6. Responsibilities
    - 6.1. Responsibilities of the researcher
    - 6.2. Responsibilities of the University
7. Available support
8. Review period
9. Related documents



Research Data Management

- Data Management Plan (DMP)
  - think about how will you work with your data
  - “living document” – should be improved / updated over time
  - FAIR principles
    - use repositories, provide context & documentation
- many ways to create DMP
  - many tools are available
  - Data Stewardship Wizard / FAIR Wizard
    - introduction
      - (video) FAIR Wizard - Introduction to Environment from Point of Researcher
    - CU at https://cuni.fair-wizard.com/
    - CAS at https://avcr.fair-wizard.com/

Research Data Management

- researchers must have some knowledge about how to manage research data properly
- we support data stewards
  - coordinates the collection, preservation, security and maintenance of data within a research project
  - faculty data steward / project data steward / lab data steward
    - Faculty of Science data steward - Jiří Grulich jiri.grulich@natur.cuni.cz
    - some CAS institutes have data stewards (some don´t)
- we provide guidelines
    - Data Security Guide
      - https://openscience.cuni.cz/OSCIEN-70.html
    - Charles University Research Data Policy
      - https://cuni.cz/UKEN-1958.html

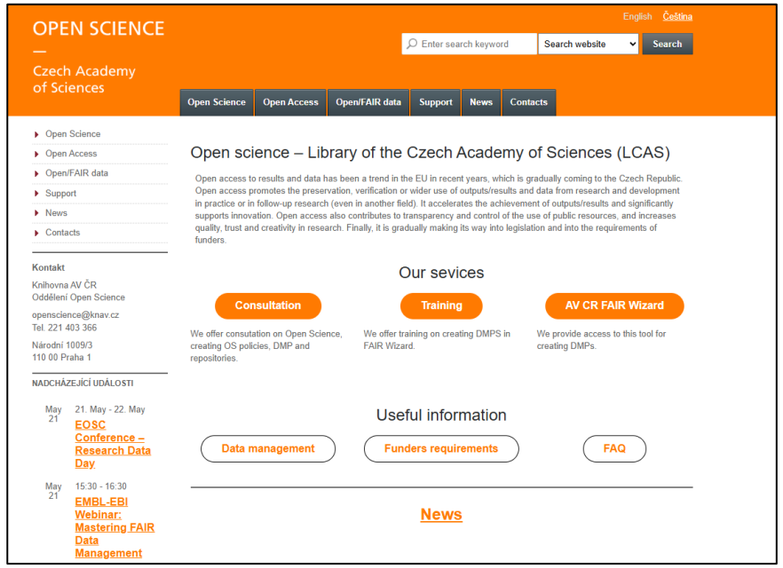
Support @ Charles University

- questions?
  - open science in general, open science in projects (before submission, running) → openscience@cuni.cz
  - open access, tokens → openaccess@cuni.cz
  - research data management, DMP, FAIR → researchdata@cuni.cz
  - licensing – publications & data, copyright issues → openlaw@cuni.cz

- Online/offline trainings
  - Open Science Week 2023, 2024 (mostly CZE)
  - 4EU+ open science trainings Open for you!

Support @ Czech Academy of Sciences

- support
  - centralized - Library of the Czech Academy of Sciences
    - Open Science Support https://openscience.lib.cas.cz/en/
  - on institutes
    - depends on each institute – check list of contacts



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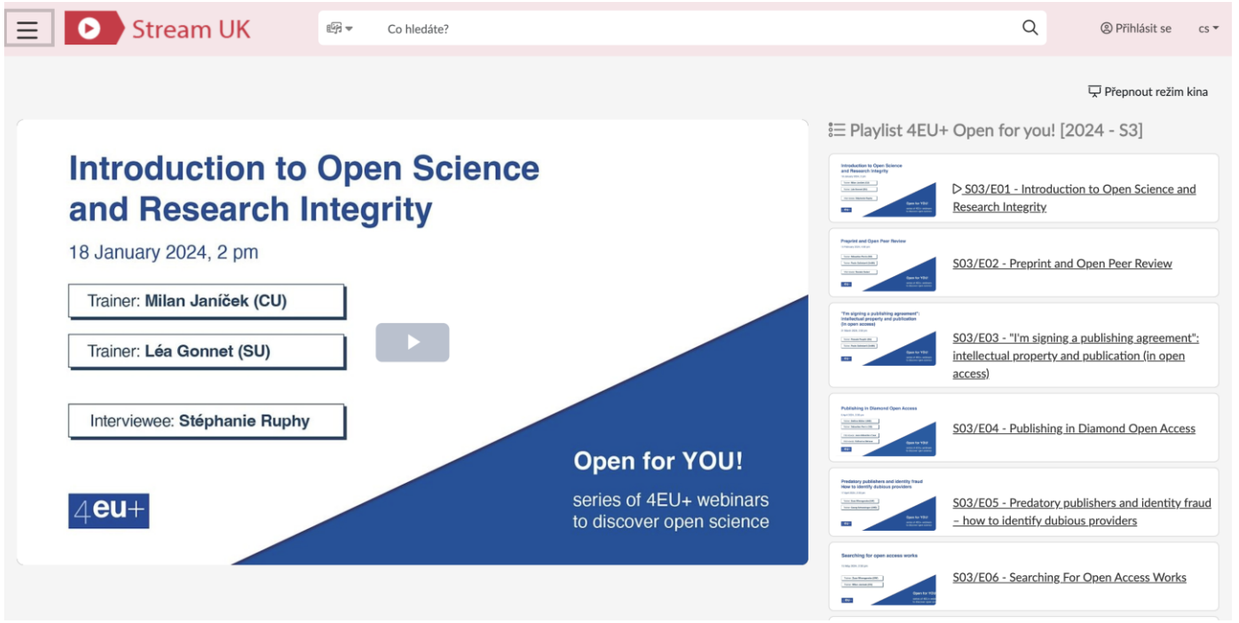

https://4euplus.eu/4EU-768.html

Thank you for your attention!

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5.11.2024

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