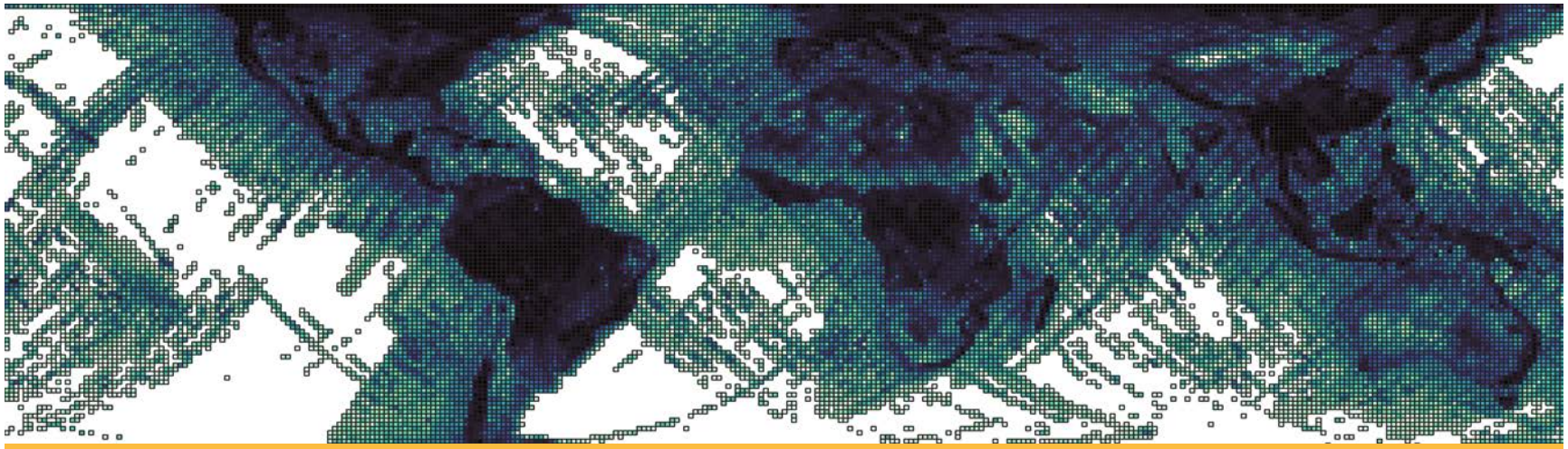
International Institute for Applied Systems Analysis
IIASA www.iiasa.ac.at



GEO-OPEN-HACK-2024: Big Geospatial Data Hackathon with Open Infrastructure and Tools

International Institute for Applied Systems Analysis
IIASA www.iiasa.ac.at

OPEN EARTH MONITOR

SPATIAL ECOLOGY

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No. 101059548.

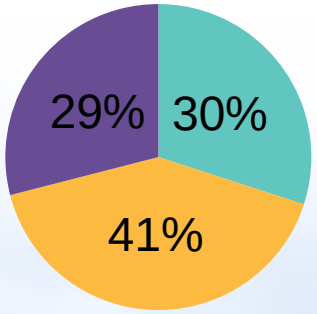
Milutin Milenković (milenkovic@iiasa.ac.at)

Novel Data Ecosystems for Sustainability (NODES), IIASA

Date: 24. June 2024

GEO-OPEN-HACK-2024, Laxenburg, Austria

The International Institute for Applied System Analysis



- Natural Scientists & Engineers
- Social Scientists
- Mathematicians and others

417 researchers from 52 countries

1,062 co-authors from 158 institutions in over 64 countries

4,267 alumni from 100 countries

Laxenburg, Lower Austria

Science into Policy for Sustainable Wellbeing

Programs

Advancing Systems Analysis	Biodiversity and Natural Resources	Economic Frontiers	Energy, Climate, and Environment	Population and Just Societies	Strategic Initiatives
Research groups	Research groups	Research fields	Research groups	Research groups	Current intitiatives

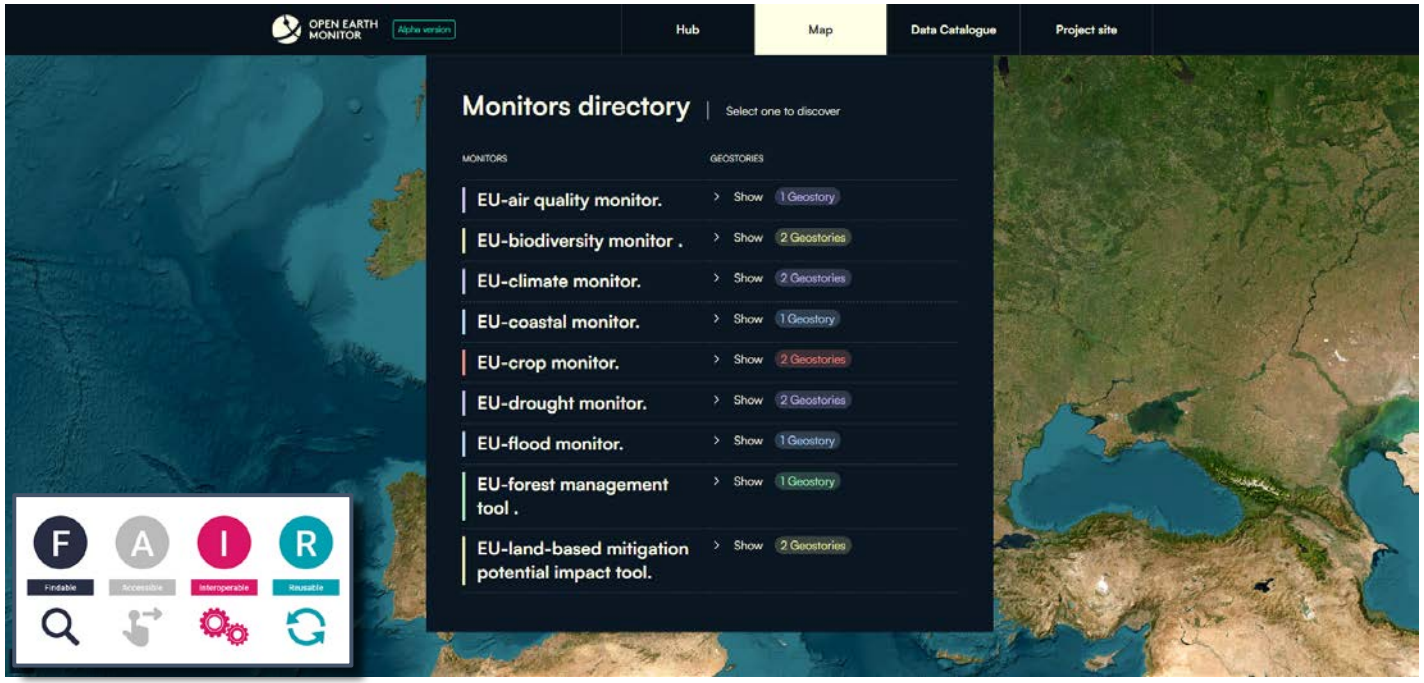
Open-Earth-Monitor Cyberinfrastructure (OEMC)

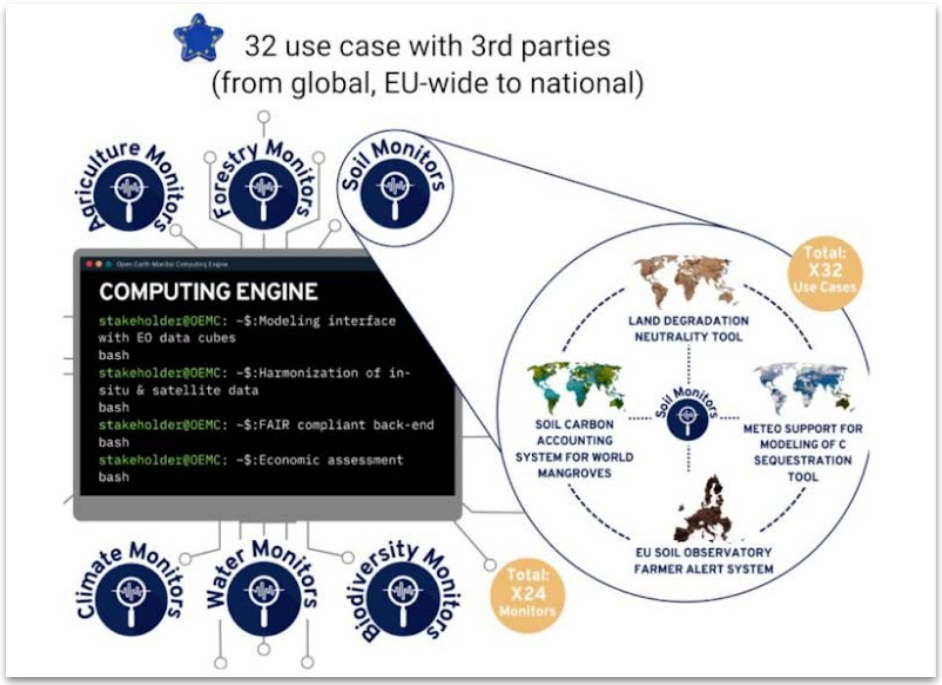
Consortium: 23 partner organizations
Funding: EUR 12 720 045,00
Period: June 2022 - July 2026
Call: Horizon CL6 2021 governance 01

FAIR Science: Findable, Accessible, Interoperable & Reproducible

1. **Reproducible research**: computational notebooks, knowledge hubs, …
2. **Open Source software**: AGPL, GPL, MIT, Apache, …
3. **Open Data license:** CC-BY, CC-BY-SA, ODbL, …
4. **Data & metadata repo's + catalogs:** STAC, Zenodo …

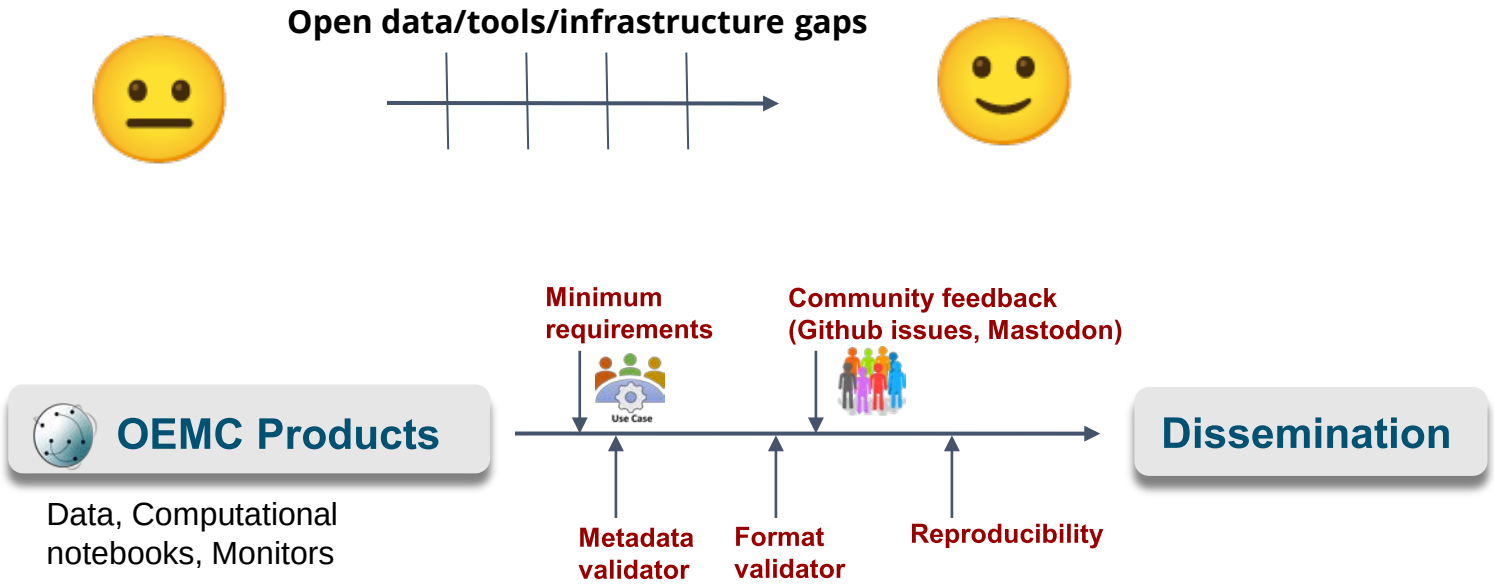
https://app.earthmonitor.org

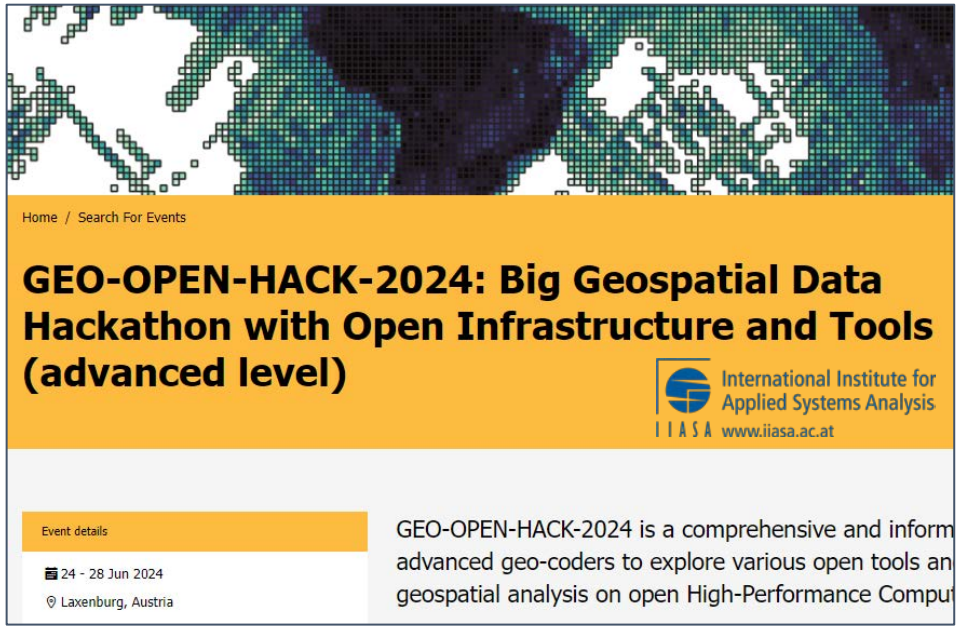




GEO-OPEN-HACK-2024: Aim & Goals

- To lower the barrier and transfer knowledge to users dealing with big geospatial data analytics
- Familiarize with and understand differences among different big-data computing approaches
- Present and get feedback on OEMC solutions/products
- Identify current gaps in big data computing





Agenda GEO-OPEN-HACK 2024

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Time	Sunday 23-Jun-24	Monday 24-Jun-24	Tuesday 25-Jun-24	Wednesday 26-Jun-24	Thursday 27-Jun-24	Friday 28-Jun-24
08.00-08.30					Canadian Pancake Breakfast IIASA Schlossrestaurant	
08.30-09.00		Get together IIASA WODAK meeting room	Get together IIASA WODAK meeting room	Get together IIASA WODAK meeting room		Get together IIASA WODAK meeting room
09.00-09.30		Keynote Raymond Oonk, SURF	Keynote Tom Hengl, OGH	Keynote Jan Verbesselt & Dainius Masiliunas	Keynote Edzer Pebesma, Uni Münster	Keynote Wolfgang Wagner, TU Wien & EODC
09.30-10.00		Giuseppe Amatulli Geo-Processing with HPC	Pieter Kempeneers Geo-python with HPC	Keynote Patrick Griffiths, ESA	Claus Michele & Valentina Premier openEO	Anne Fouilloux & Tina Odaka Pangeo
10.00-12.30				Antonio Fonseca ML with HPC		
12.30-13.30		Lunch break IIASA Gvishianhi meeting room	Lunch break IIASA Gvishianhi meeting room	Lunch break IIASA Gvishianhi meeting room	Lunch break IIASA Gvishianhi meeting room	Lunch break IIASA Gvishianhi meeting room
13.30-14.00		Big Data Story Giuseppe Amatulli	Big Data Story Milutin Milenković & Florian Hofhansl	Big Data Story Yu-Feng Ho & Johannes Heisig	Big Data Story Valentina Premier	Big Data Story Leandro Parente
14.00-17.30		Working with your data	Park Visit Laxenburg Park -- START: 16.00h Working with your data	Working with your data	Working with your data	Open floor sessions OEMC and other open initiatives. OEMC data platform & feedback. Where to implement my big data problem?
18.00-21.00	Ice Breaker Event Rest. Stöckl im Park Prinz-Eugen-Strasse 25 1030 Vienna			Social Event IIASA Schlossrestaurant Herzog Albrecht-Strasse 1 2361 Laxenburg		

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Computing Approaches

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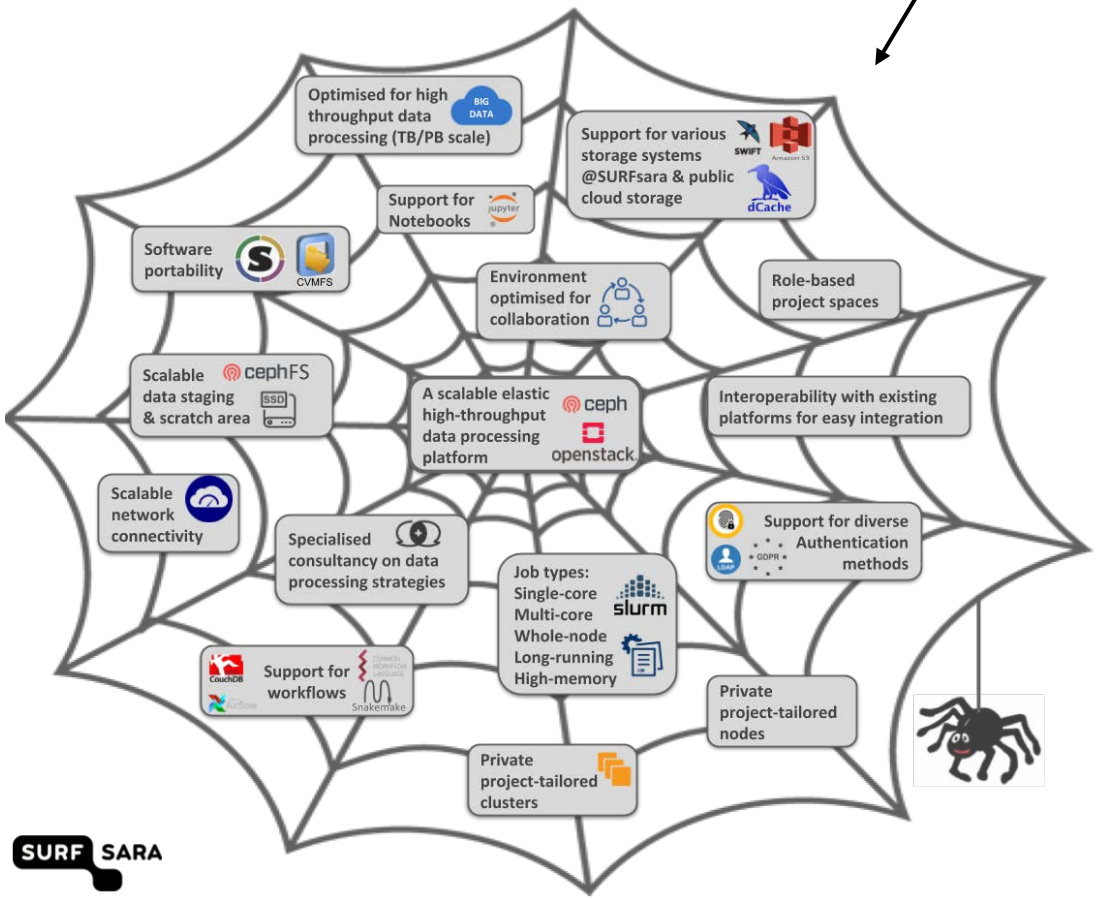


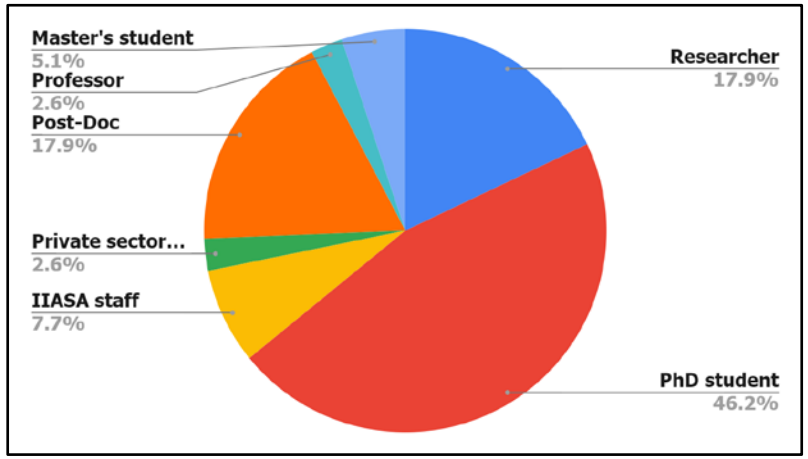
openEO Platform

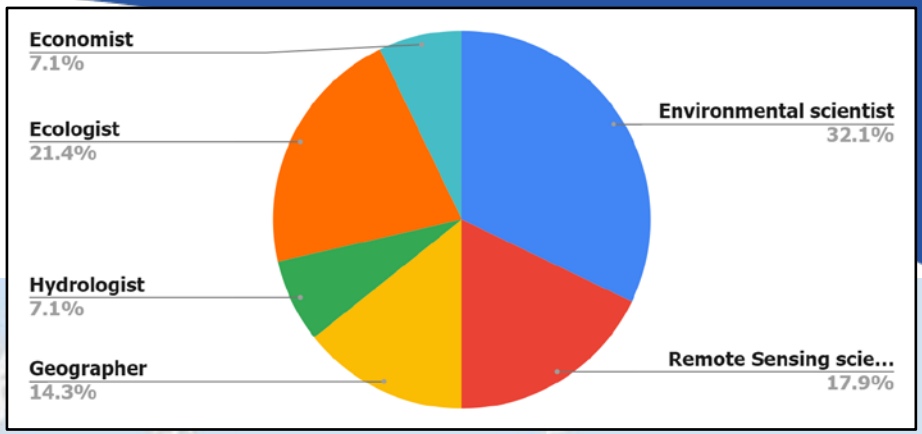
GEO-OPEN-HACK-2024 Facts

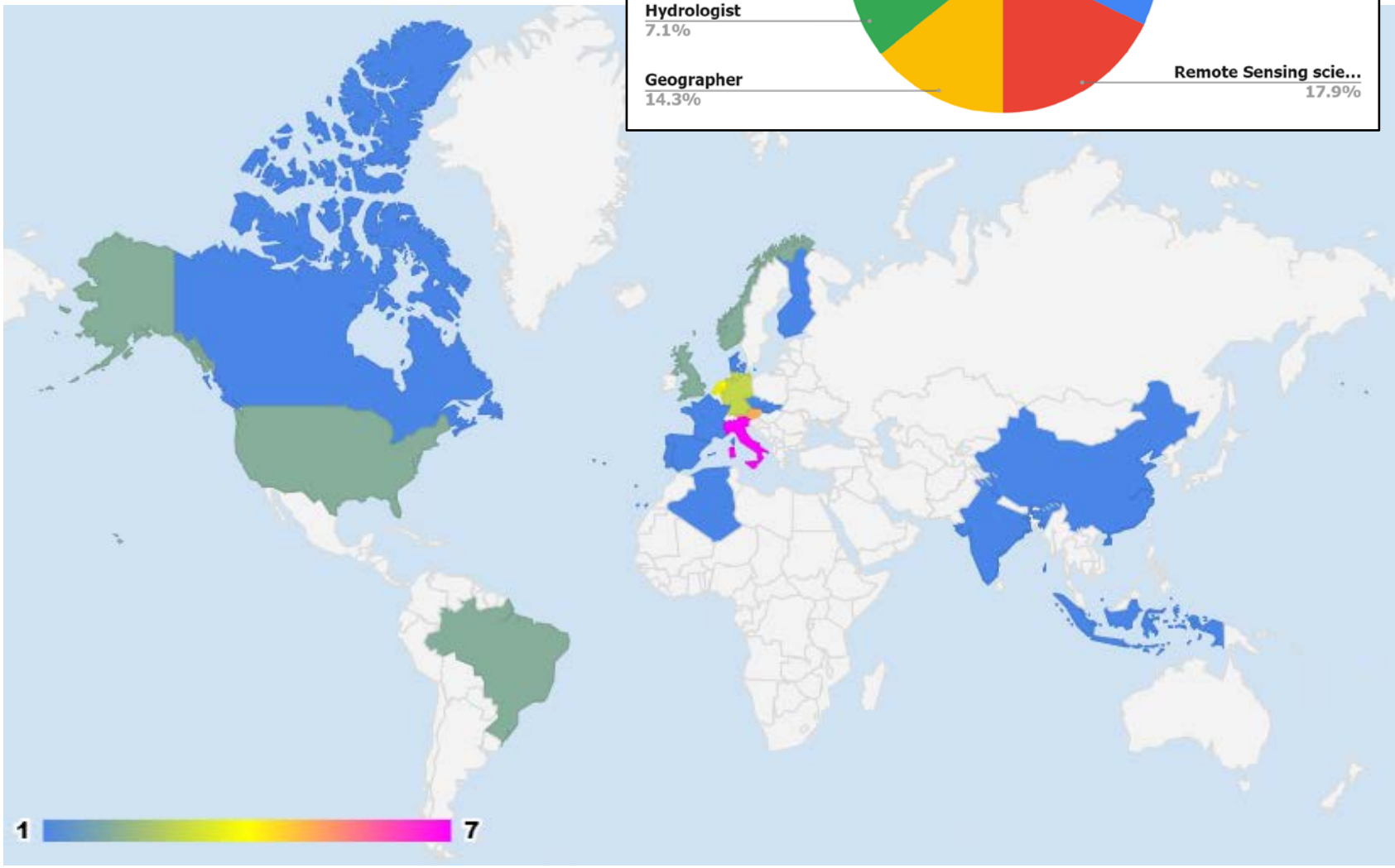
Participants.....33
- on-site.....21
- online.....12

Teachers.....11
Keynote Speakers.....7
Organization.....4

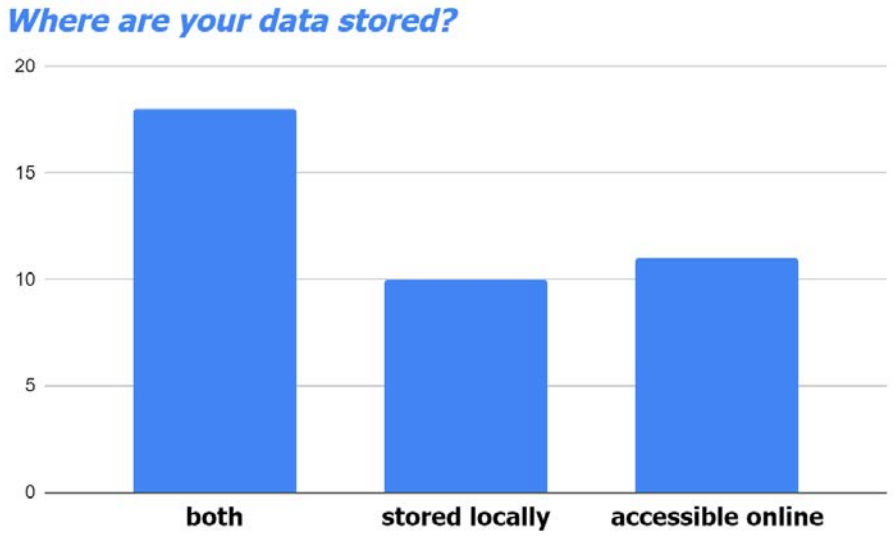
Total 55

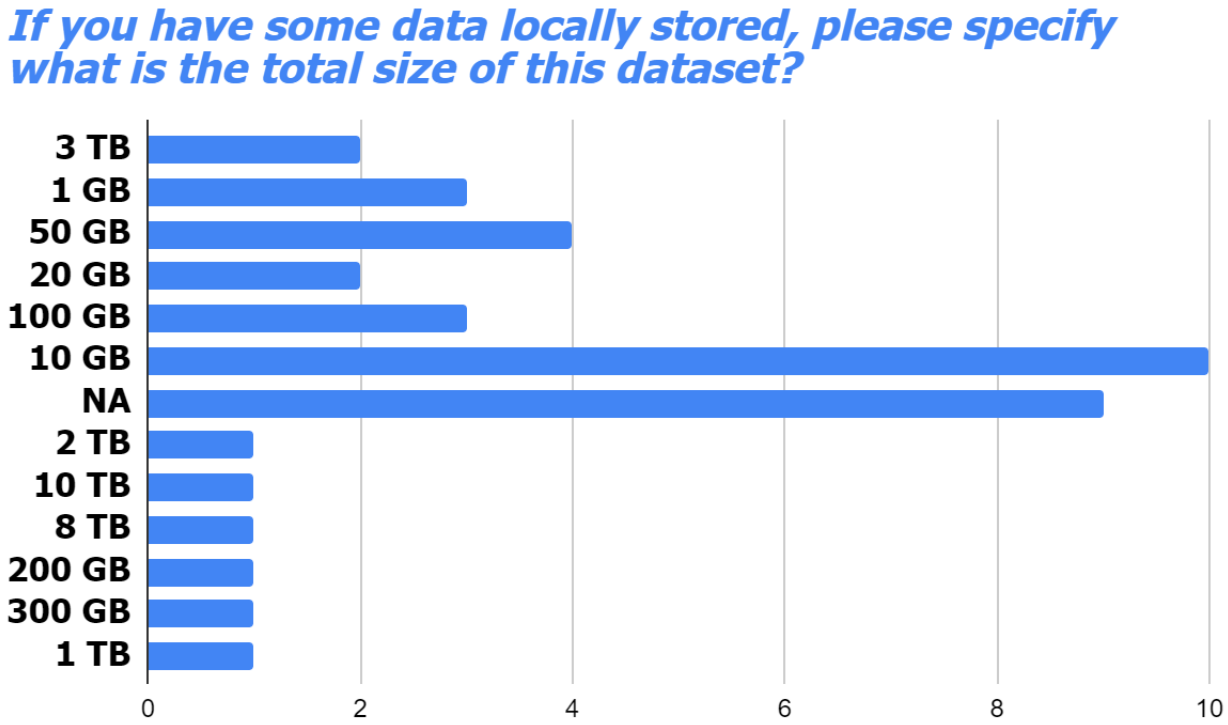






Big Data

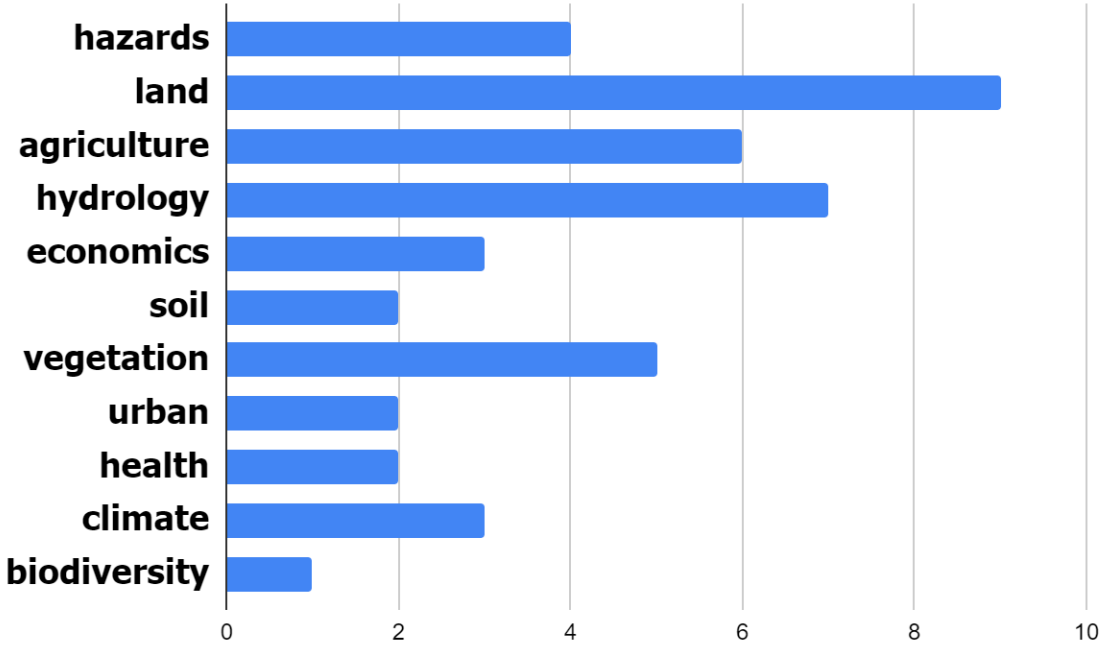

Where are your data stored?
20
15
10
5
0
both
stored locally
accessible online


If you have some data locally stored, please specify what is the total size of this dataset?
3 TB
1 GB
50 GB
20 GB
100 GB
10 GB
NA
2 TB
10 TB
8 TB
200 GB
300 GB
1 TB
0
2
4
6
8
10

Tools & Topics

Please specify what geospatial tools and/or libraries you already know that you will be using in the hackathon

Topic of your big geospatial data project?



Open-Earth-Monitor
GLOBAL
WORKSHOP
2024

FROM EO DATA TO POLICY IMPACT

EO data in support of environmental, biodiversity, & climate policies

https://earthmonitor.org/events/global-workshop-2024

October 2 — 4, 2024, Laxenburg, Austria

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IIASA www.iiasa.ac.at

OpenGeoHUB
Connect · Create · Share · Repeat

Funded by the European Union

GEO-OPEN-HACK-2024: Collaborative Initiative

International Institute for Applied Systems Analysis
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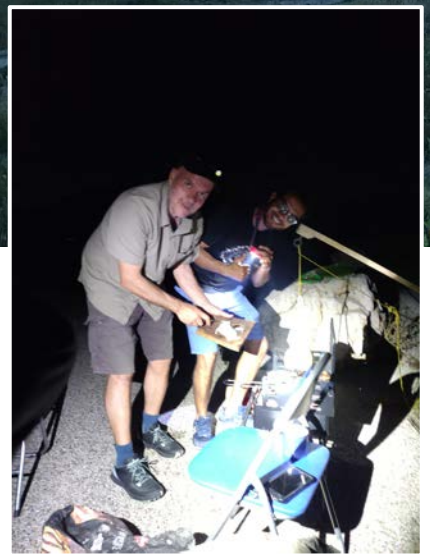
https://spatial-ecology.net/

SPATIAL ECOLOGY

SURF

openEO Platform

PANGEO
European Pangeo Community



Thank you!

...and let us have a great hackathon!