



EarthBridge

Building Bridges between Earth Observation
and Environmental Sciences

Vítězslav Moudrý, CZU Coordinator



Funded by
the European Union

CEEDUCON 2025

Project aims



- Substantially increase the interdisciplinary research capacity of the Czech University of Life Sciences Prague in the field of environmental EO;
- Further improve the use of environmental EO tools by a wider community through twinning with three internationally-leading universities

Call: HORIZON – WIDERA – 2021 - Twinning

Duration: 2023 – 2025

Coordinator:
Czech University of Life Sciences Prague (CZU)

Partners:
Technische Universität Dresden (TUD)

Alma Mater Studiorum – Università di Bologna (UNIBO)

Rheinische Friedrich- Wilhelms-Universität Bonn (UBO) – from March 2024

Budget: 1.1 M EUR

Research and Innovation

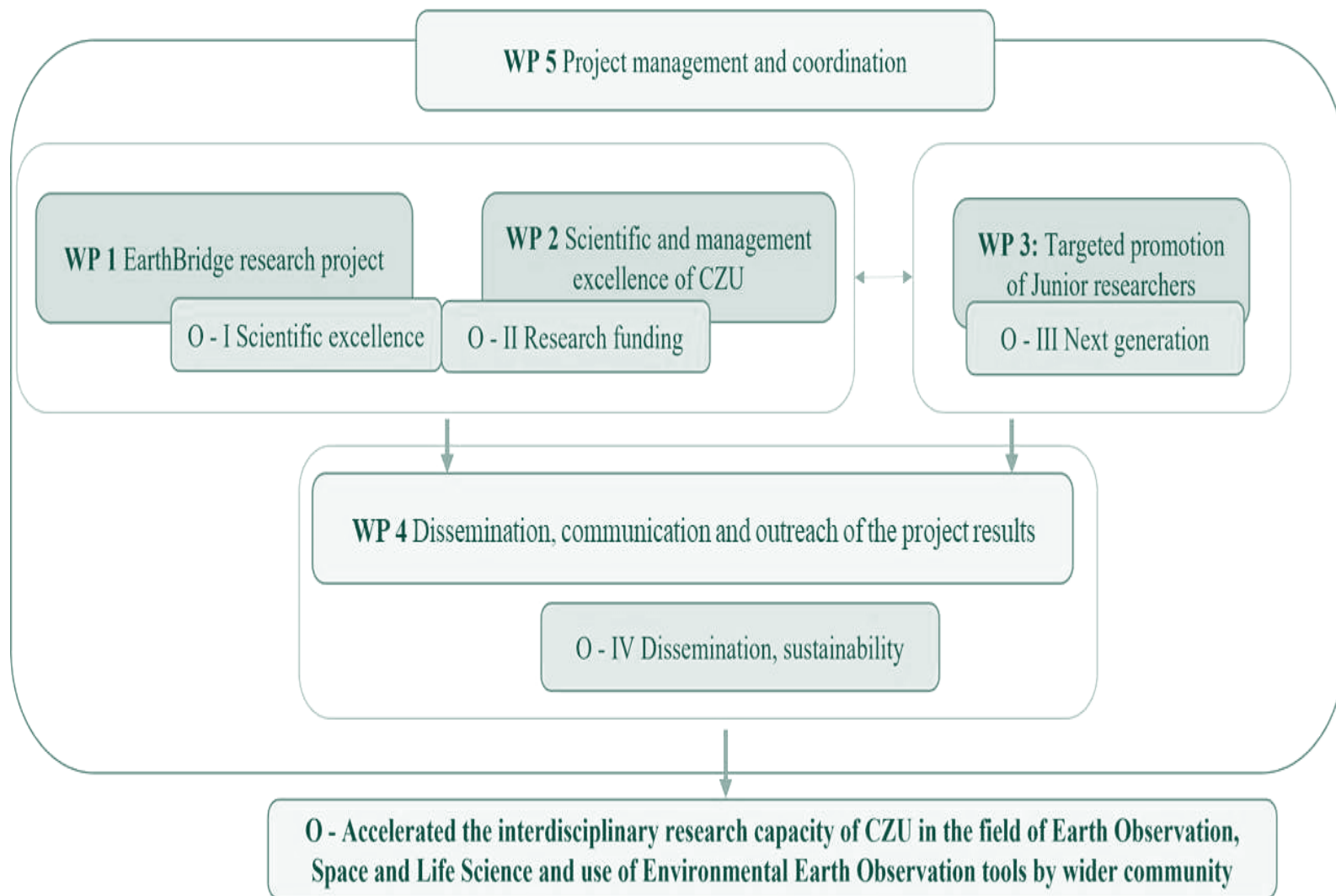


- Mapping Biodiversity through Earth Observation
- Integration of passive and active remote sensing (optical, radar, LiDAR)
- Detailed mapping of canopy height, terrain, and habitat complexity
- New analytical methods to improve data reliability and reduce modelling bias
- Applied to monitoring, restoration, and conservation of agricultural and forest ecosystems



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Project structure



Project tools and activities



Senior and junior research exchanges



Scientific training



Project management training



Summer school



A joint study programme



A synthesis project for early-career researchers



Involvement of regional/national institutions





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Thank you



Faculty of
Environmental Sciences



TECHNISCHE
UNIVERSITÄT
DRESDEN



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA





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Proposal, People, Pitfalls: Behind the Scenes of the EarthBridge Twinning Project

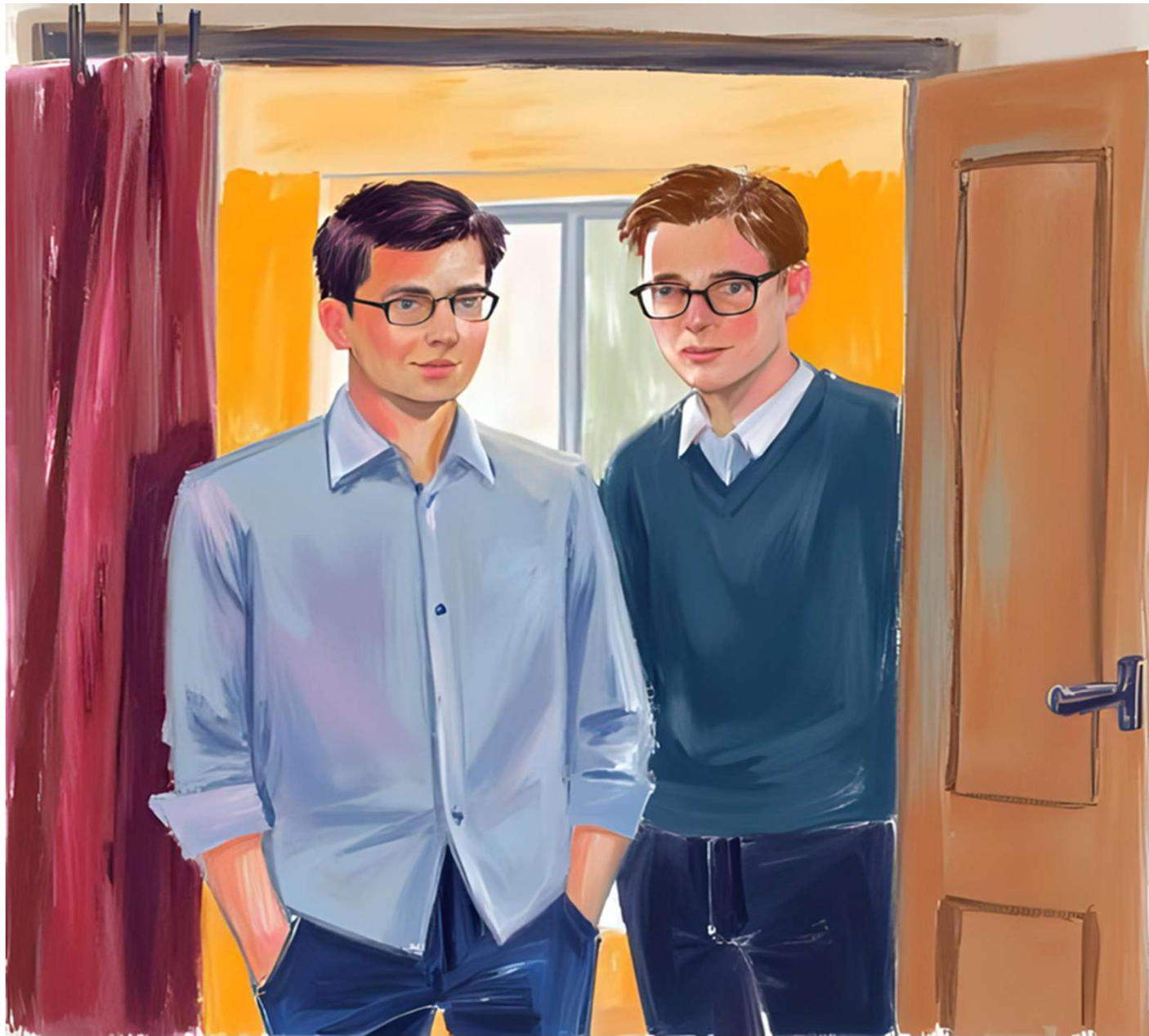
Emilie Trakalova, CZU – on behalf of the EarthBridge team





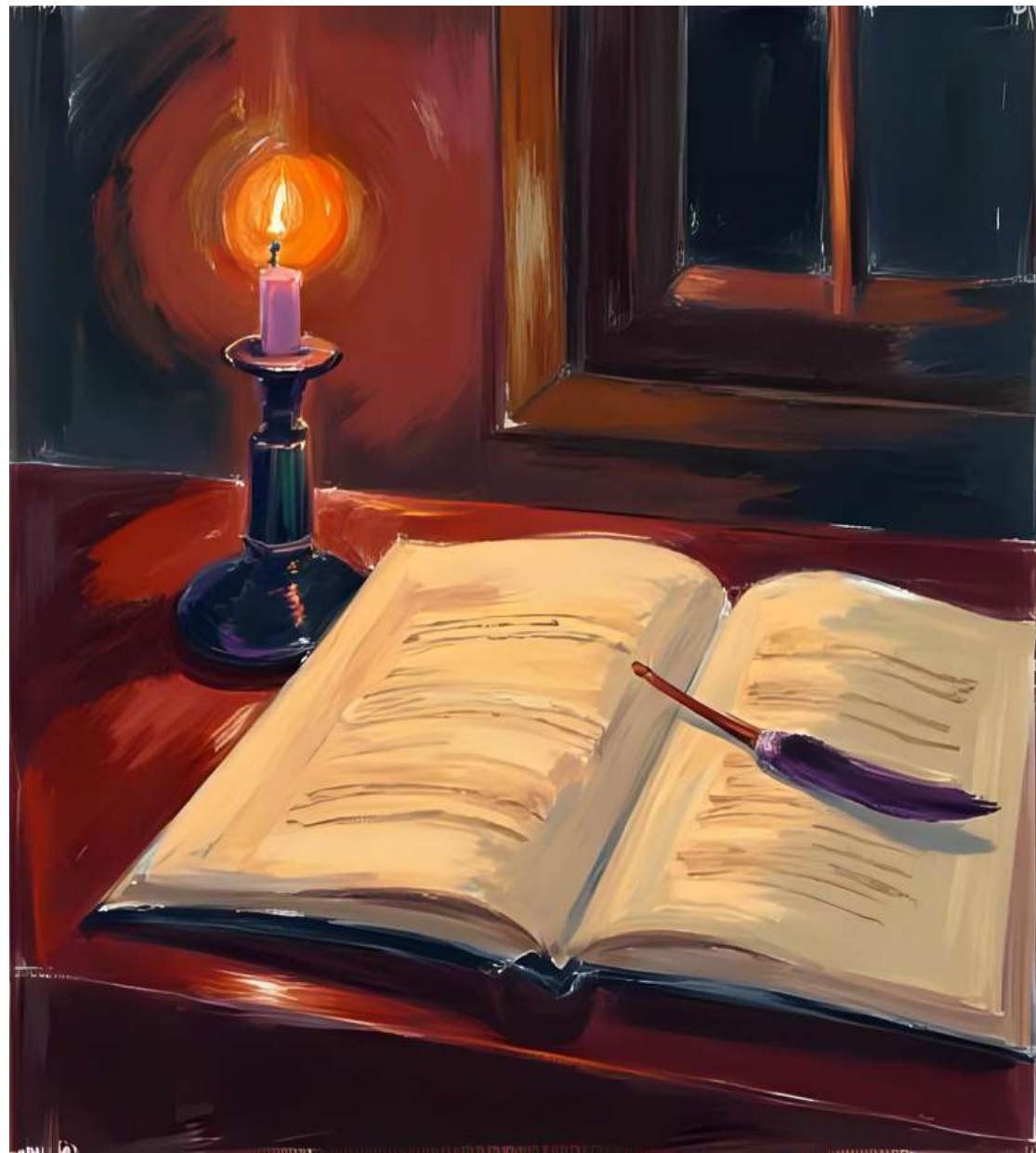
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Once upon the time.....





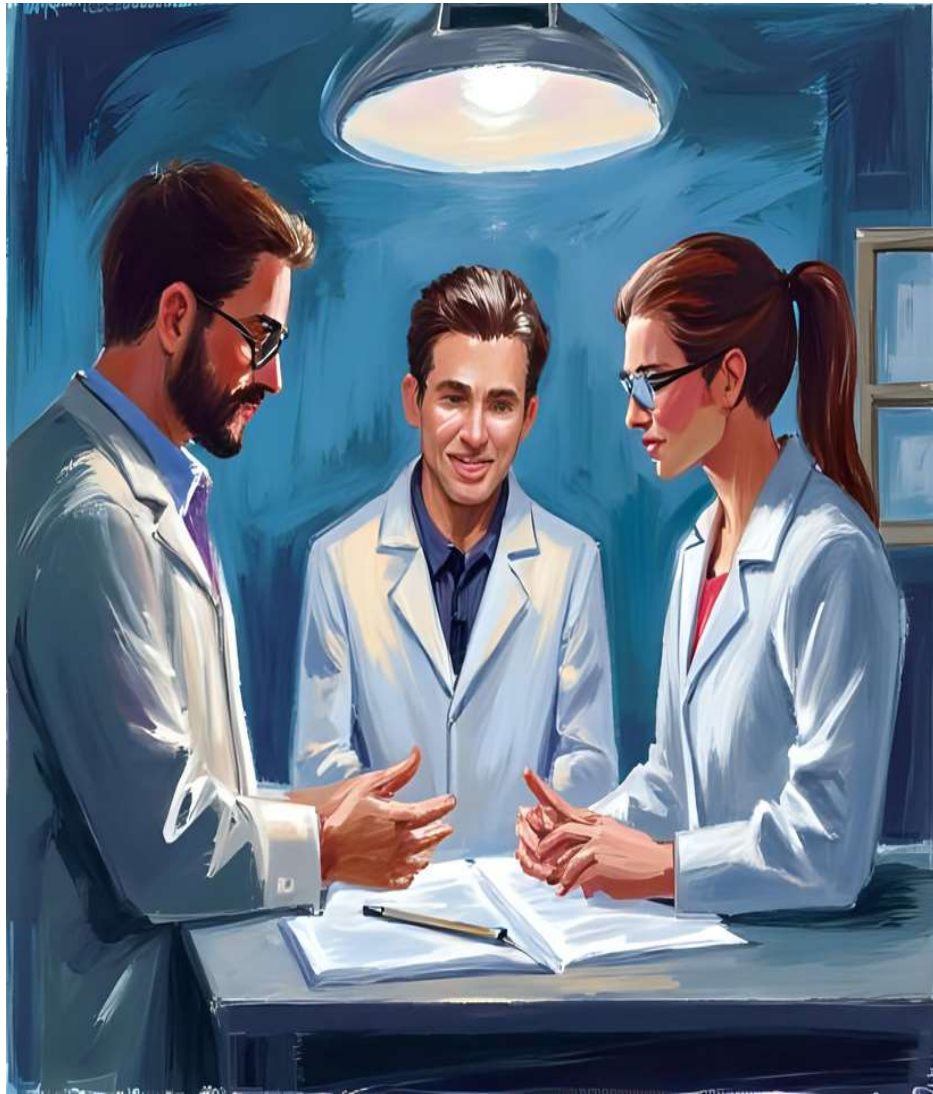








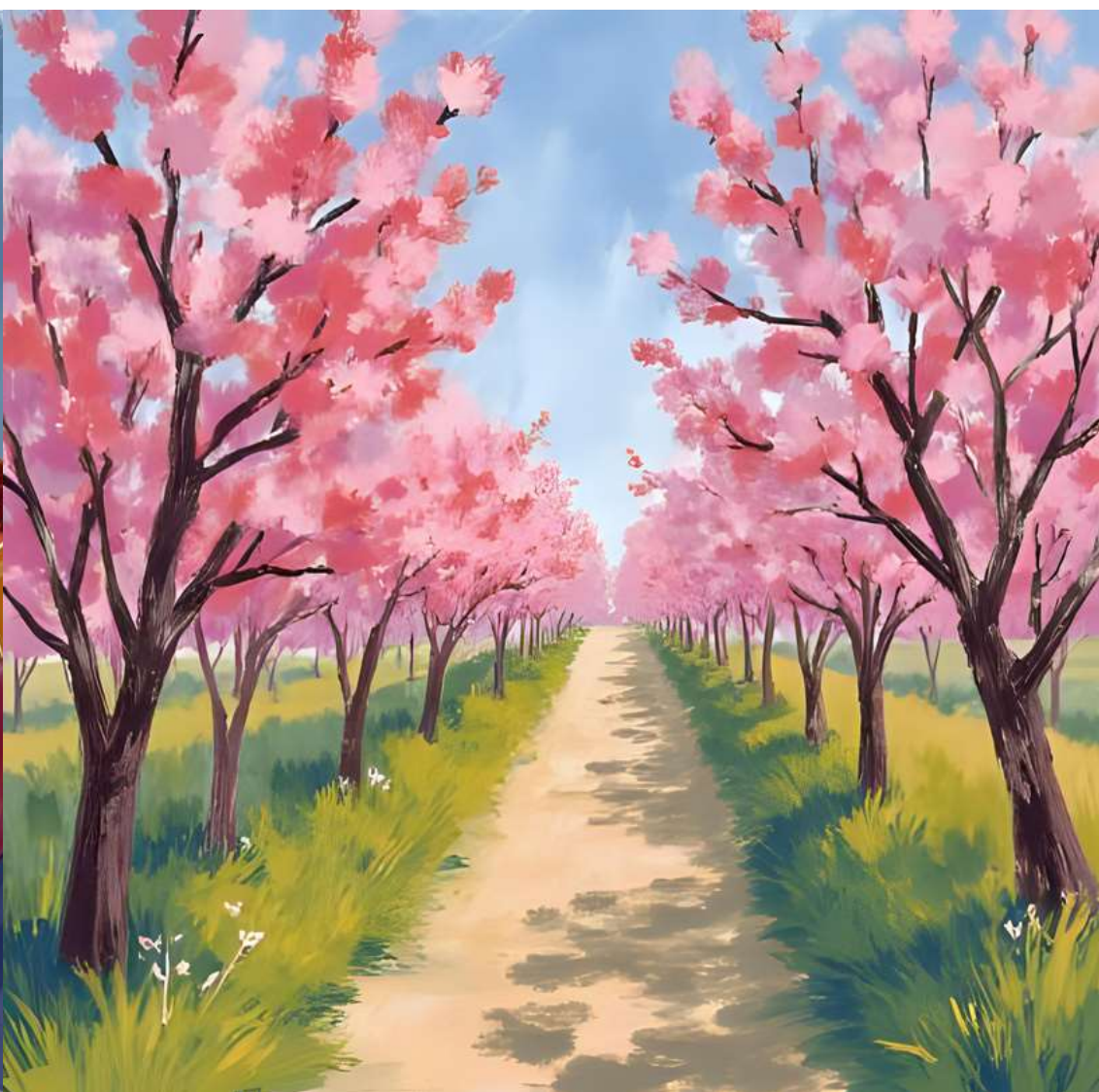




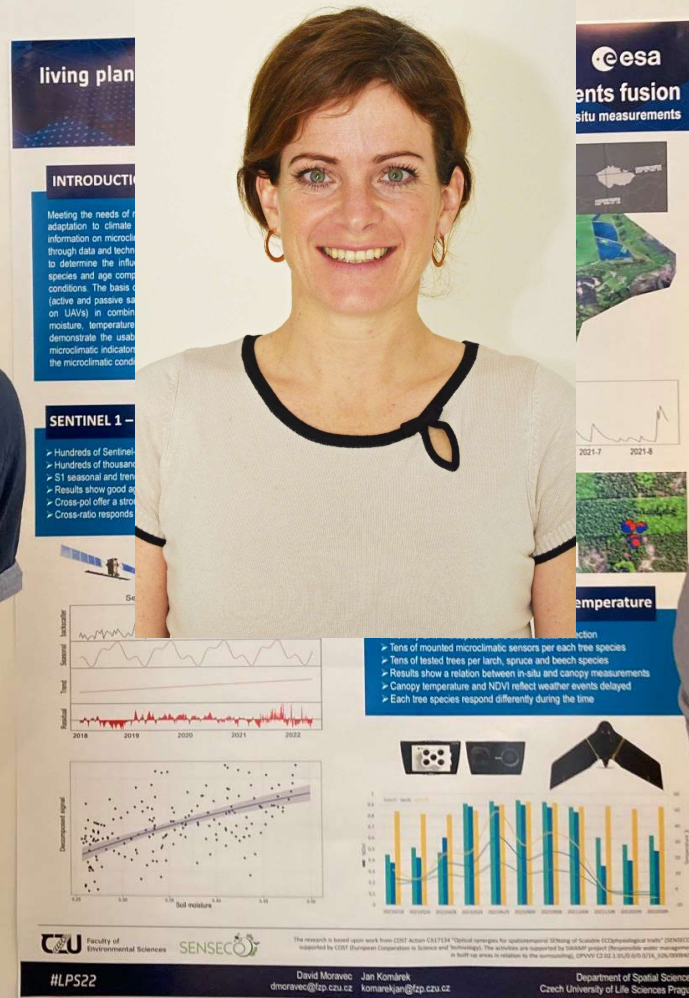














Thank you for
your attention



Earth
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POLICY FACTSHEET

Twinning for Europe's Competitiveness

Keeping Excellence Connected Across All Regions



POLICY IMPLICATIONS NATIONAL LEVEL

- Integrate Twinning outputs into national Smart Specialisation (S3) and innovation strategies.
- Establish national co-funding schemes (ERDF/ESF+) for sustaining staff posts, digital infrastructures, and open-science systems.
- Create training pathways for research managers to professionalise project design, finance, and communication.
- Promote cross-sector collaboration – universities, SMEs, public authorities, and NGOs.
- Encourage family-friendly mobility and virtual co-mentoring models to support inclusiveness.

IMPLEMENTATION PRINCIPLES

- Maintain bottom-up design – openness for all disciplines and institutions.
- Support regional synergies to convert capacity building into innovation and employment.
- Monitor sustainability via baseline / mid-term / post-project reviews.
- Include measurable KPIs (mobility, open-science compliance, proposal success rate, staff retention).

KEY MESSAGES TO POLICYMAKERS

- Reinstatement annual Twinning calls without interruption.
- Guarantee long-term continuity under FP10 as a recurring excellence measure.
- Adopt transparent KPI-based monitoring to show clear returns on investment.
- Ensure synergy with regional and national instruments to translate excellence into jobs and innovation.
- Invest in people – staff exchanges, co-mentoring, and skills development are Europe's true strategic capital.

“Support what works, partnerships that make excellence possible”

COORDINATED BY SISTER TWINNING PROJECTS



TWINNING MATTERS..

When we connect, we create



WHAT?

A European Union programme that connects research teams across Europe. It helps universities and research centres grow stronger by teaming up with top scientific institutions.

WHY?



Boosting skills & research excellence



Building European partnership

Impact creation & sustainability



CHANGE

600 projects supported
3500+ researchers trained
38% higher proposal success rates
25 countries connected



TWINNING MATTERS

No small roles, just shared impact



Twinning creates structured, 3-year small consortium partnerships between Widening institutions and excellence centres. It builds sustainable capacity in research, project management, open science, and proposal design – raising success rates and visibility in EU programmes.

WHAT WORKS



Skills & Management
Increased professional competence through mentoring, exchanges, and targeted training.



Research Excellence
Increased publication output & proposal quality



Institutional Growth
New RMA offices, data stewardship, open science policies

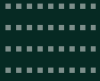


Collaboration
Long-term partnership with excellence institutions



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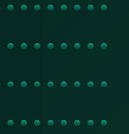


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Outcomes of EarthBridge

Christopher Marrs, TU Dresden: on behalf of the entire EarthBridge Team



What We Achieved Together

- Boosted mobility & training for early-career researchers (ECRs)
- Cross-border collaboration: fieldwork, publications, joint mentoring
- Hands-on Earth Observation training: drones, canopy modelling, biodiversity monitoring
- Strengthened institutional networks & increased Czech University of Life Sciences' visibility

Key Ingredients for Success

- Strong focus on young researchers
- Independent and self-led
- Interdisciplinary and practical work
- Supportive mentoring & training structures
- Knowledge exchange beyond research (e.g. EU project management)





Where Do We Go From Here?

- Embed training into institutional programs (e.g. curriculum, staff training)
- Sustain collaborations through new joint projects (e.g. Erasmus Programme, Interreg Czech/Saxony, Poland/Saxony)
- Explore alumni & regional networks for ongoing engagement
- Prioritise young researcher mobility & leadership in future initiatives



Not actually
working in
project



Thank You



Faculty of Environmental Sciences, Czech University of Life Sciences Prague,
Czech Republic



Professional background

BSc in Environmental Sciences at Alma Mater Studiorum University of Bologna, Campus of Ravenna, Italy

Thesis on effects of climate change on cetaceans

Two year Master Degree in Sciences and Management of Nature -
Curriculum Global Change Ecology and Sustainable Development Goals at
Alma Mater Studiorum University of Bologna, Italy

Thesis on the use of a drone to map, identify and count the burrows of
two semi fossorial rodents in the environment



Professional background



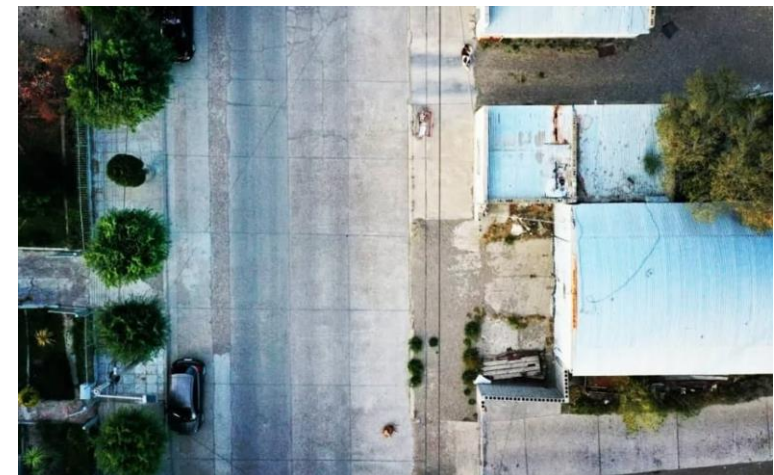
Experience in the **field**: activities of environmental monitoring, fieldwork for mammal, bird, and reptiles identification and habitat analysis.

I met lots of researchers from different countries.



Implementation of a web-based GIS and drone survey for the management, control, and monitoring of the population of stray dogs in Patagonia, Argentina.

Experiencing new approaches to do research.



Research grant



October 2023: start collaborating for the **EarthBridge project**

- Gained experience in **cross-institutional collaboration** (Czech University of Life Sciences Prague, Technische Universität Dresden, Università di Bologna).
- Enhanced skills in **knowledge transfer** and training, through staff exchanges, joint workshops, summer schools
- Learned to apply and adapt robust, transferable **EO tools** and methods in different disciplines and landscapes
- Strengthened my **interdisciplinary mindset**
- Built **professional competencies** in project coordination, research networking and international project management



EarthBridge - synthesis project

- **International workshop** held at Krkonoše National Park, bringing together master's and PhD students from multiple countries and institutions.
- Focus on **multidisciplinary collaboration**: participants paired into teams combining different research backgrounds (ecology, conservation, remote sensing) to address challenges in the park.
- Sessions included brainstorming, fieldwork and synthesis of data, with the aim of drafting a **joint publication**.
- Project aims to build research capacity in environmental Earth-observation and **cross-institutional collaboration** between institutions
- The initiative demonstrates a shift from traditional siloed research toward team-based approaches



PhD in Prague



October 2024: start on my first year of **PhD**



BEAST
Project



MOBI
Lab

Project: study of temporal changes in spectral diversity using remotely sensed data at different spatial scales to understand the relationship between spectral and alpha and beta diversity over the last 40 years.

PhD in Prague



MOBI lab



Petr Keil
Principal investigator



Florencia
Grattarola
Postdoc



Kateřina
Tschernosterová
Technician



Kateřina Hájková
Administrative officer



Carmen Soria
Postdoc



Gabriel Ortega
Solis
Data manager



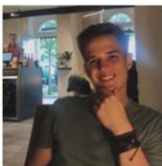
Daniela
Mellado-
Mansilla
Technician



Gabriele Midolo
Postdoc



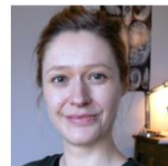
Adam Ulicny
Technician



Ivo Kadlec
Technician



Elisa Padulosi
PhD student



Melanie Tietje
Postdoc

Projects

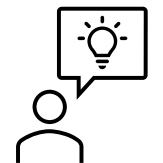
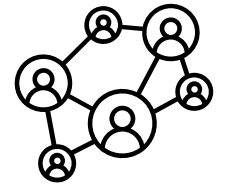
Biodiversity dynamics across a continuum of space, time, and their scales (**BEAST**)

GRAssland Communities Experiment (**GRACE**): 300 years of insight from a large-scale natural experiment - joint grant (so highly collaborative project)

What I have learnt so far



- **Adaptability:** learning to thrive in new academic, cultural, and professional environments.
- **Cross-cultural communication:** learning to collaborate effectively with people from diverse backgrounds.
- **Open-mindedness:** gaining new perspectives into different ways of thinking and working.
- **Networking:** building professional relationships across institutions and countries thanks to conferences, summer schools and workshops.
- **Resilience:** learning to manage challenges, logistics, and uncertainty while working abroad.
- **Problem-solving in diverse contexts**
- **Project management:** coordinating activities across teams
- **Personal growth:** becoming more confident, flexible, and globally aware.



Thank you

MSCA & Summer school



David Moravec

TU Dresden / Czech University of Life Sciences
david.moravec@tu-dresden.de



MSCA Fellowships CZ

Czech co-fund of Marie
Skłodowska-Curie Actions
Postdoctoral Fellowships

Project title: WaCoRe - Woody Plant Water Content

Assessment via Microwave Corner Reflection

Funded by: Ministry of Education (MŠMT ČR)

Host institution: Technische University Dresden

Principal Investigator at CZU: David Moravec

Project manager: Kateřina Hájková

Duration: 1.9.2024 - 31.8.2026

Budget: ~183 000 Eur



David Moravec



Matthias Forkel





We are expanding cooperation between CZU & TUD

New projects

**Weave - German
Research Foundation
(DFG) & Czech
Science Foundation
(GACR)**

Joint Students

**Evripidis Avouris
Vít Ježek**



Remote Sensing of Forests – Summer School



- **270+ applicants from 25 countries registered**
- **14 lecturers**
- **20+ students**
- **5 days (2–6 June)**
- **Excellent feedback**
- **Converting to online**
- **Future continuation**





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Faculty of
Environmental Sciences

BETWEEN CLOUDS AND CANOPIES

DRONE-AIDED ENVIRONMENTAL MODELLING

CEEDUCON

Nov 20, 2025

Prague

Jan Komárek



linktr.ee/honzakomarek

Mountain and forest lover. Drone pilot. Enjoying academia and continuously trying to fit into the Remote Sensing community and become a real Earth Observer.

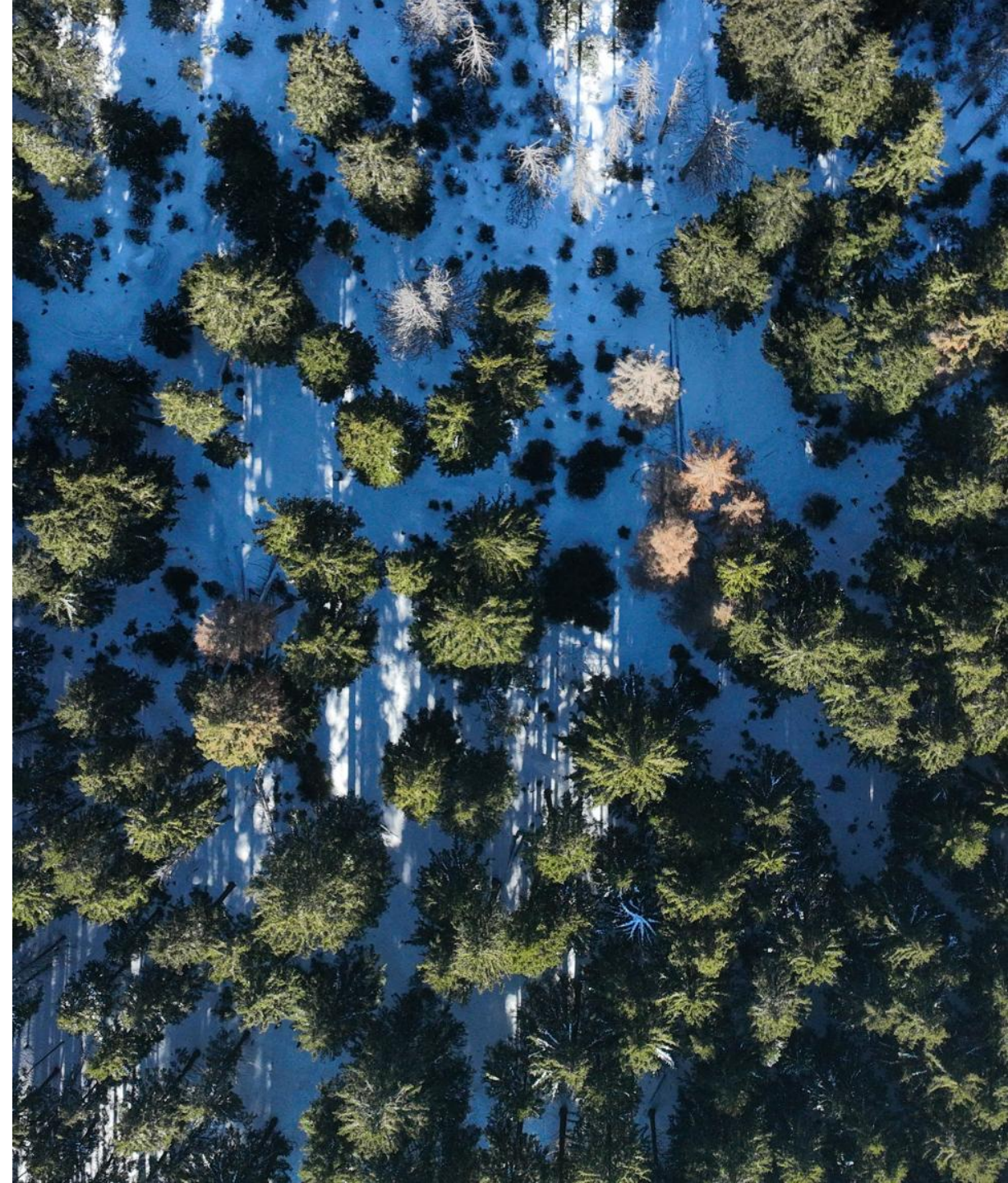
Affiliation

Assistant professor of Drone Remote Sensing
Czech University of Life Sciences Prague

Internships within the EarthBridge project

2025/03 – 2025/07, Technische Universität Dresden

2024/05 – 2024/06, Università di Bologna





Research Activities at TU Dresden

Focus: Advancing habilitation work and fostering international collaboration

Habilitation Thesis Preparation:

- Intensive period devoted to structuring, writing, and refining key chapters.
- Integration of interdisciplinary insights relevant to environmental and Earth system research.

Research Networking and Collaboration:

- Initiated discussions to identify joint research opportunities and suitable international project calls.
- Engaged regularly with TU Dresden colleagues for methodological exchange and constructive feedback.

Scientific Dialogue:

- Active participation in seminars and informal research meetings.
- Collaborative discussions shaped by the expertise of **Prof. Matthias Forkel**, fostering future cooperation.



Impact on Scientific Career and Research Environment

- Stronger academic profile
- Expanded international network
- Boost to research quality and visibility
- Motivated and guided PhD students
- New perspectives and collaborative spirit
- Long-term partnerships initiated

INNOVATION TAKES FLIGHT

Jan Komarek



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