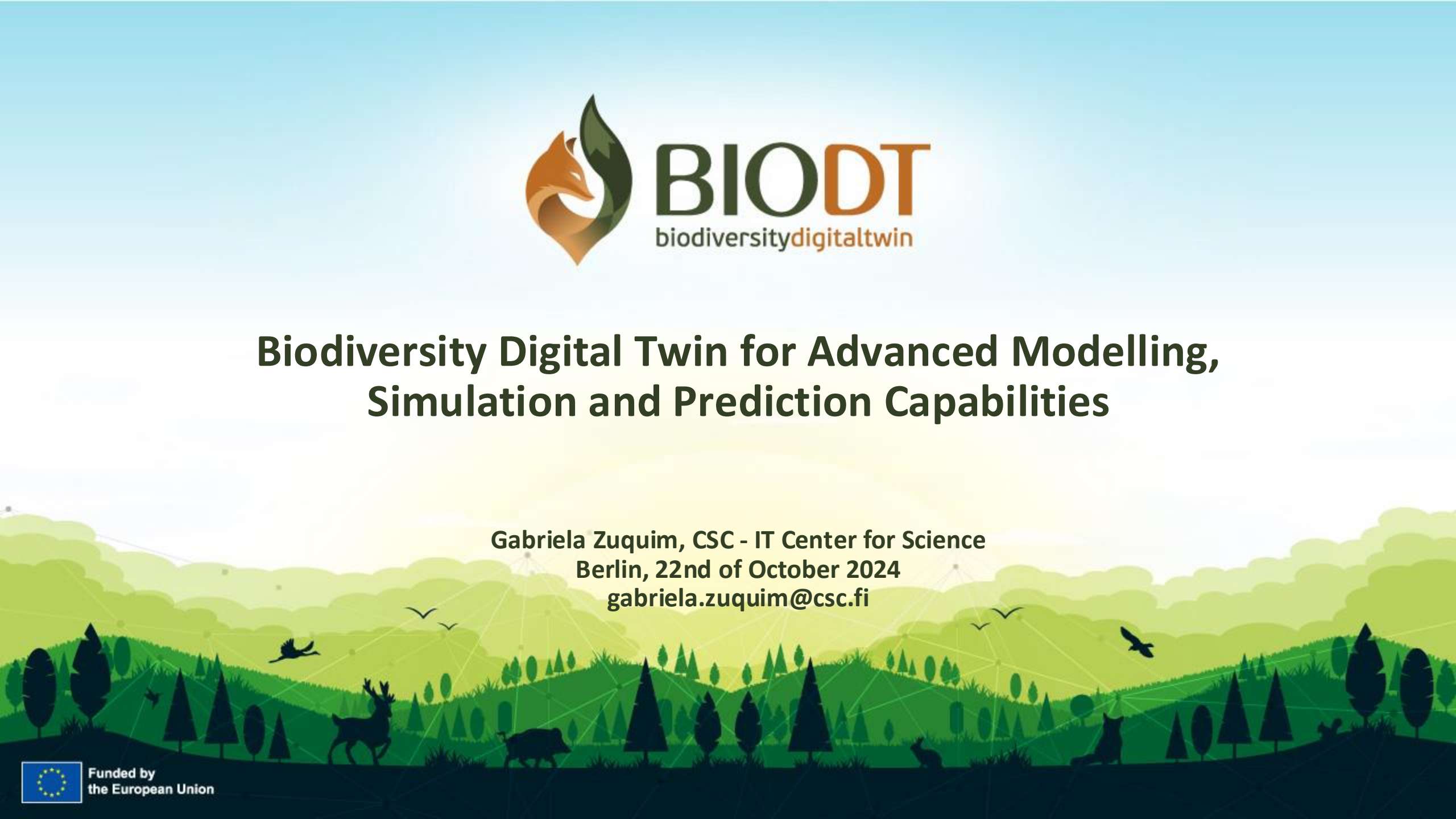

Biodiversity Digital Twin for Advanced Modelling, Simulation and Prediction Capabilities

Gabriela Zuquim, CSC - IT Center for Science
Berlin, 22nd of October 2024
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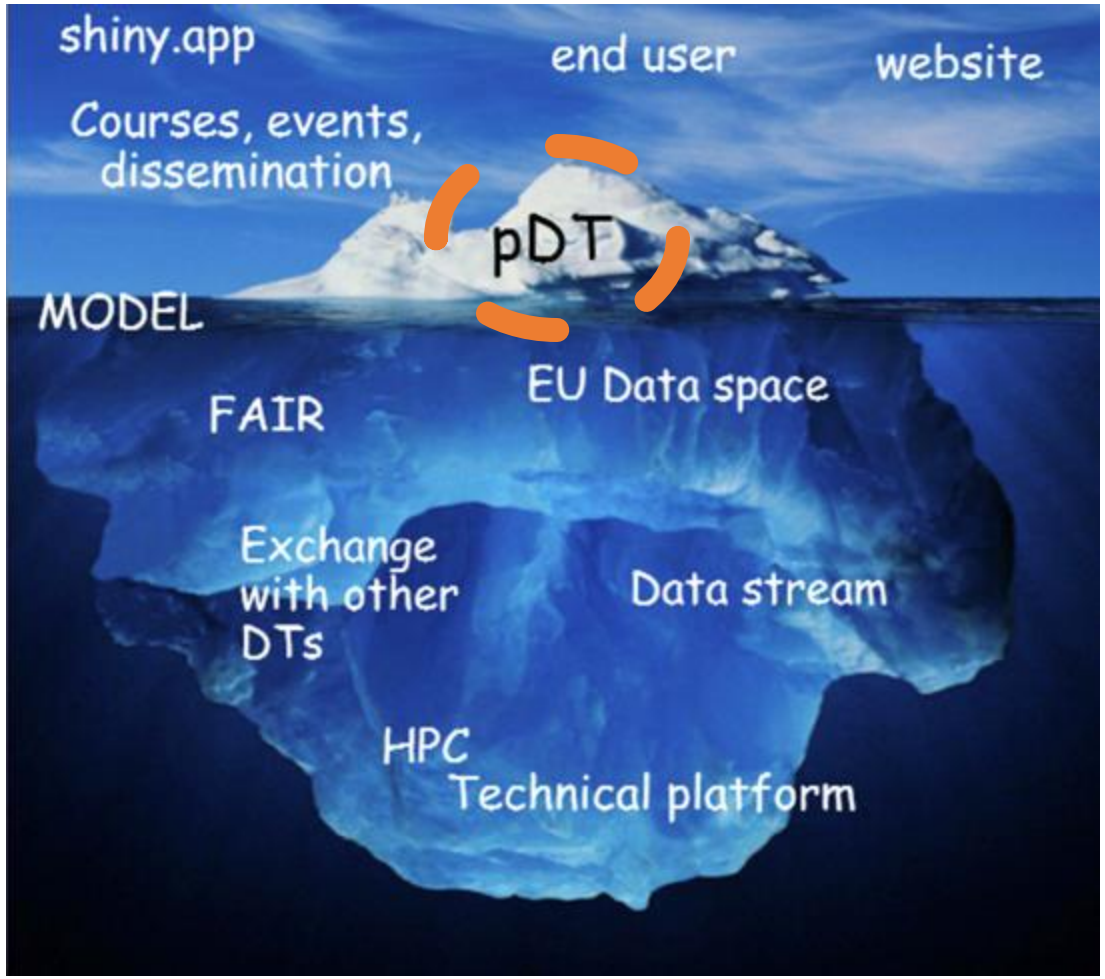
Funded by
the European Union



Species response to environmental change

- Biodiversity Dynamics
- Ecosystem Services

Dynamics and threats from and for species of policy concern

- Invasive Species

Species interactions with each other and with humans

- Pollinators
- Disease Outbreaks

Genetically detected biodiversity

- Crop wild relatives and genetic resources for food security
- DNA detected biodiversity in cryptic habitats

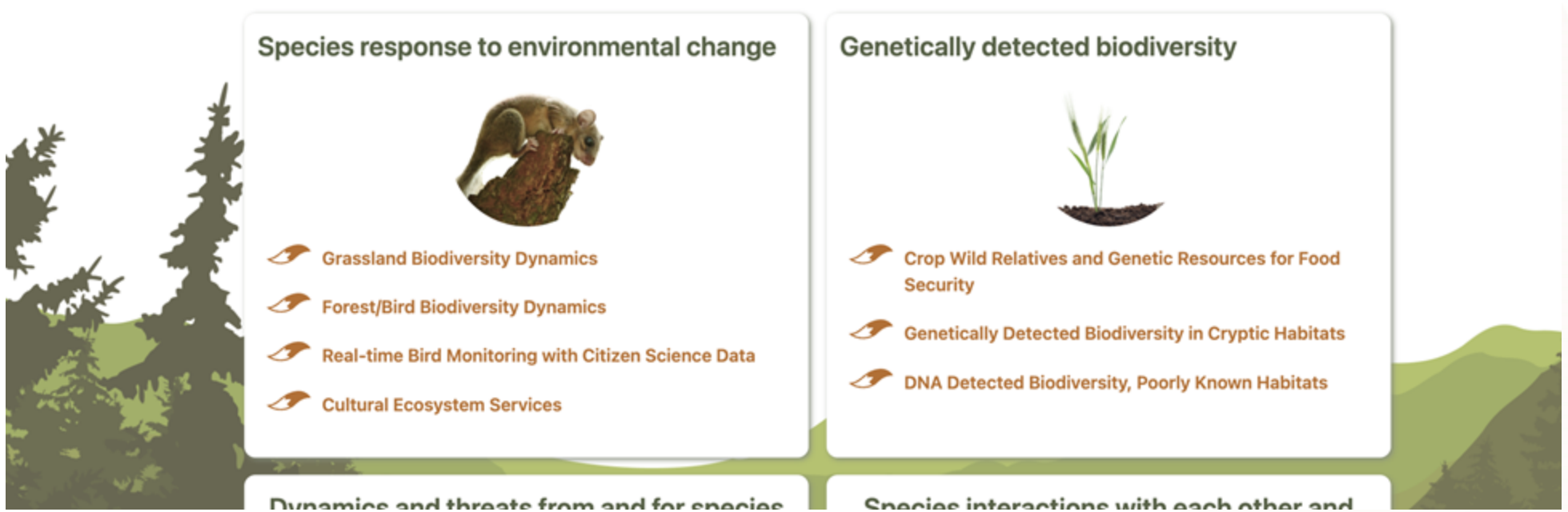
Info Digital Twin

- Species response to environmental change
  - Cultural Ecosystem Services
- Species interactions with each other and with humans
  - Honeybee

ed models for simulation and prediction capabilities, through practical use cases addressing critical

BioDT exploits the LUMI Supercomputer and employs FAIR data combined with digital infrastructure, predictive modelling and AI solutions, facilitating evidence-based solutions for biodiversity protection and restoration.

The project responds to key EU and international policy initiatives, including the EU Biodiversity Strategy 2030, EU Green Deal, UN Sustainable Development Goals, Destination Earth.

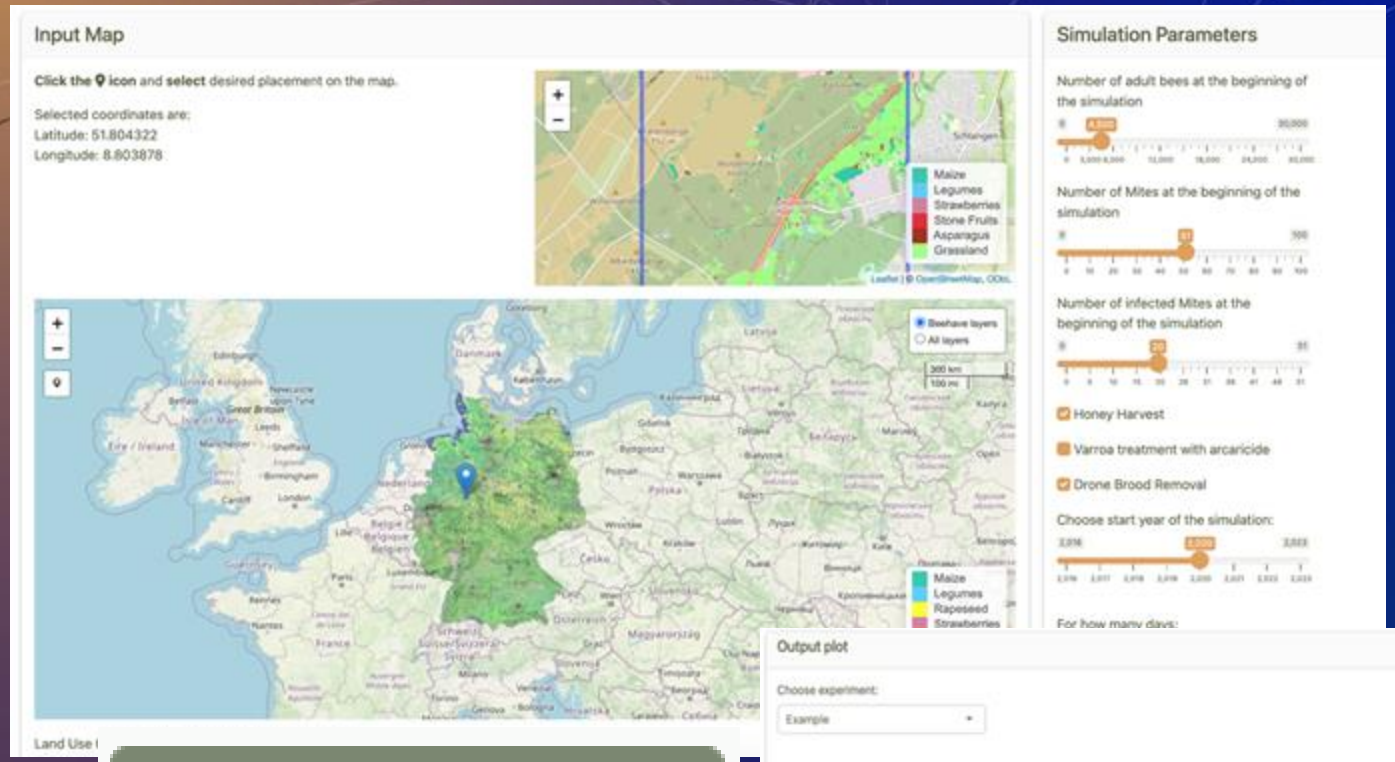


BIODT
biodiversitydigitaltwin

Where are the best locations and treatments to optimize honey production?

pDT: Beehive dynamics and honey productivity

The first operational BioDT prototype of a digital twin: towards groundbreaking insights into honey bee performance



Run simulation

https://app.biodt.eu/app/biodtshiny

A **digital twin** fosters collaboration by its nature:

- Data
- A model
- An application/representation = USERS
- Data <-> Model <-> Interface

GBIF

LifeWatch ERIC

DiSSCo
Distributed System of Scientific Collections

eLTER

Thank you!