**Session Proposal**

# Session Title

Web-based digital twins and decision support systems for soil sustainability in land planning and management

# Session Organizers

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# Session Description

The ongoing soil and environmental degradation, coupled with the vast potential of modern technologies, creates both a critical need and a critical opportunity to bridge the gap between available solutions and their implementation. While we have powerful tools—ranging from satellite technologies and IoT sensors to large environmental databases, and robust policies—these tools are not always fully leveraged to combat land degradation effectively. To address this gap, we need to adopt user-friendly, web-based tools, including digital twins, that support soil management, as well as environmental, agricultural, and forest policies, while enabling meaningful actions for sustainability across all stakeholders. These digital twins should integrate several essential components, such as: Web-GIS facilities for geographic data visualization and analysis; integration with different dataset (from satellite data to Earth Critical Zone data and climate datasets, including those focused on climate change); technologies to facilitate the management of large datasets for analysis; modeling engines (both static and dynamic) that leverages high-performance computing (utilizing both CPU and GPU resources) to enable real-time simulation and modeling.

This session aims to foster a collaborative community by bringing together scientists, developers, and practitioners who are working at the forefront of Decision Support System, as well as mapping, modeling, and visualization tools, whose goal is to be easily accessible and impactful in advancing soil science, while promoting sustainable land management practices.

This Session is welcoming contributions presenting innovations and instruments toward sustainable soil and land management in the fields of:

* Decision Support Modeling
* Data Visualisation and Decision-Making Tools
* Data Science, Big Data Analytics
* Digital Agriculture and Digital Soil Mapping
* Technical and Managerial Dashboards for Decision Support
* Knowledge Acquisition, Management, Extraction and Visualisation
* Artificial Intelligence and Machine Learning

# Format

Oral presentations

1. **Proposed Speakers**

Fabio Terribile, CRISP – Università di Napoli Federico II, coordinator of the LANDSUPPORT EU project for the Development of an Integrated Web-Based Land Decision Support System Aiming Towards the Implementation of Policies for Agriculture and Environment.