**Session Proposal**

# Session Title

Advances in Soil Morphology and Micromorphology: unveiling the earth's hidden resource

# Session Organizers

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# Session Description

This session will explore the cutting-edge advancements in soil morphology and micromorphology, highlighting the transformative impact of emerging technologies on our understanding of soil architecture and soil function.

We will delve into integrating standard approaches with the application of soil sensors applied to soil morphology such as XRF, gamma-ray spectrometry, hyperspectral imaging. Similarly in soil micromorphology, we seek to demonstrate new approaches such as FTIR microscopy, Raman spectroscopy, hyperspectral imaging, X-Ray microtomography or energy-dispersive X-ray spectroscopy (EDS) sensors, to obtain insights into the composition and spatial organization of soil components at the microscale.

Furthermore, the session will explore the development of open-access databases for soil micromorphology. This includes the implementation of datacubes, PostgreSQL databases, and WebGIS platforms, facilitating the sharing and analysis of soil microscopy data on a global scale.

Beyond research, we will explore the application of 3D printing technology to translate complex soil morphology and micromorphology data into tangible models, enhancing soil awareness and education. This technology enables the creation of detailed soil replicas for scientific communication and public engagement.

# Format

Oral presentations, with the usual alternative option for poster presentations.

# Proposed Speakers

***None at this time.***