**Session Proposal**

# Session Title

*Advancing pedometrics*

# Session Organizers

Alexandre Wadoux, James Cook University, Australia, Chair of the Pedometrics Commission

# Session Description

This session invites contributions that push the frontiers of pedometrics by exploring how quantitative, data-driven, and mechanistic approaches can improve our understanding of soils. By focusing on the definition of Pedometrics as “Soil science under uncertainty”, we will welcome oral presentations that seek to address challenges in modelling soil formation processes with quantified uncertainty, developing unified classification systems, and leveraging machine learning to reveal pedological insights. The session will also focus on innovations in soil sensing, spatial and temporal scaling, and the integration of expert knowledge in digital soil mapping. Further, we welcome studies that link soil data to ecosystem services, quantify spatial uncertainty, and enhance the usability of spatial soil information for land managers and policymakers. Contributions that bridge pedodiversity with soil biodiversity and connect scientific advances with societal needs are especially encouraged.

Keywords: Soil modeling, digital soil mapping, uncertainty quantification, soil sensing, pedogenesis, soil classification, soil functionality, pedodiversity, ecosystem services

# Format

Oral presentations

# Proposed Speakers

Budiman Minasny, Alex McBratney, Gerard Heuvelink, Colby Brungard,