# PROGRAM SCHEDULE

| Time | | Tuesday (21.1.25) |
|---|---|---|
| 09:00 | 10:00 | **Registration** |
| 10:00 | 10:30 | **Welcome Reception** |
| 10:30 | 11:30 | **Conference Inaguration** |
| 11:30 | 12:00 | **Tea/Coffee Break** |
| 12:00 | 12:15 | **A tribute to Dominique Arrouays and Open discussion** |
| **12:15** | **13:30** | **Session 1 : Digital Soil Mapping inputs: Sampling approaches and legacy soil data processing** |
| **Dsiscussant** | | **Budiman Minasny** |
| **Chairperson** | | **Suresh Kumar** |
| **Session Secretary** | | **Raj Setia** |
| **Alberto Lázaro-López**<br>Integrating LUCAS and Spanish national surveys for SOC estimation: influence of survey design and sampling scheme | | |
| **Krishna Kumar Mourya**<br>Soil Organic Carbon Mapping Using Digital Soil Mapping Techniques of Arunachal Pradesh, India | | |
| **Luboš Borůvka**<br>Consistency of digital soil property maps based on results from different soil surveys in the Czech Republic | | |
| **Laura Poggio**<br>Mapping of highly organic soil with the support of legacy soil atlases | | |
| **Laura Poggio**<br>Soil stocks: can we quantify how much soil there is globally? | | |
| **Saketh**<br>Evaluating the use of Soil Health Card (SHC) as a big data source for geospatial assessment of SOC spatial variability in agricultural soils in India | | |
| **Edward Smit**<br>Combining algorithm and data level approaches to handle highly imbalanced soil data | | |
| 13:30 | 14:30 | **Lunch** |
| 14:30 | 15:00 | **Discussions** |

| | | |
|---|---|---|
| **15:00** | **16:30** | **Session 2 : Boosting DSM with new covariates and soil sensing data** |
| **Dsiscussant** | | **Borůvka Luboš** |
| **Chairperson** | | **R.N. Sahoo** |
| **Session Secretary** | | **S. Chakraborthy** |
| **Lagacherie**<br>Using the farmers' knowledge on soils increases the accuracy of local Digital Soil Mapping products : A case study in the Gopalapura village (India) | | |
| **Radim Vašát**<br>Introducing a Soil Diversity-Based Covariate for Digital Soil Mapping Framework | | |
| **Zamir Libohova**<br>Distributed hydrological models – A Practical approach to quantifying Soil Forming Factor Model for Digital Soil Mapping | | |
| **Somsubhra Chakraborty**<br>Digital Soil Mapping of Available Phosphorus using Smartphone-integrated Imaging Device | | |
| **Chiranjit Singha**<br>Novel Approaches in Soil Suitability Mapping Using Integrated VIs-NIR Spectroscopy and Sentinel-2 Imagery | | |
| **Girisha Ganjegunte**<br>Root-zone Soil Salinity Mapping Using Multispectral Data in a Flood-Irrigated Pecan Orchard field in the southwest U.S. | | |
| **Nishant Sinha**<br>Mid-Infrared (MIR) Spectroscopy for Soil Health Assessment in Indian Agroecosystems | | |
| **Fatemeh Hateffard**<br>Evaluating Soil Properties with VIS-NIR Spectroscopy: Full vs. Subset Wavelength Ranges from LUCAS Dataset | | |
| **Rabi. N. Sahoo**<br>Intelligent soil sensing for sustainable management | | |
| 16:30 | 17:00 | **Discussions** |
| 17:00 | 17:30 | **Tea break** |
| 17:30 | 17:50 | **Sponsor Presentations** |
| 17:50 | 18:30 | **Poster session 1** |
| 18:30 | 19:30 | **Cultural Programme** |
| 19:30 | 20:00 | **Dinner** |

| Wednesday (22.1.25) | | |
|---|---|---|
| **09:00** | **10:30** | **Session 3 : Developing new DSM models and approaches** |
| **Dsiscussant** | | **D G Rossiter** |
| **Chairperson** | | **Vinay Dadhwal** |
| **Session Secretary** | | **Vikas Sharma** |
| **Stephan van der Westhuizen**<br>Mapping soil thickness by accounting for right-censored data with survival probabilities and machine learning | | |
| **Mareike Liess**<br>Accounting for natural soil horizon boundaries in 3D modelling at national scale | | |
| **Nivas Raj M**<br>Comparing the efficiency of 1D Residual Network with Random Forest for digital soil mapping of soil depth and textural classes for Teri soils of Tamil Nadu, India | | |
| **Sakthivel R**<br>Prediction of Soil Properties using Deep Learning Algorithms – A Case Study of Perambalur District, Tamil Nadu, India. | | |
| **Anil C Somenahally**<br>Advancing scalable spatial and temporal prediction models for estimating contemporary stocks of soil organic carbon | | |
| **Budiman Minasny**<br>Assessing Soil Organic Carbon Dynamics in Australia using Pedogenon Map | | |
| **Saketh**<br>Application of Digital Soil Mapping with legacy soil data and remote sensing derived land use for mapping temporal changes in SOC density in Kerala, India (1975–2015) | | |
| **Bullo Yami**<br>Mapping and Monitoring of Soil Organic Carbon in Traditional Rice–Fallow System of Eastern Himalayan Region | | |
| **Zhongxing chen**<br>Monitoring soil organic carbon stock changes in Europe from 2009 to 2018 | | |
| 10:30 | 11:00 | **Discussions** |
| 11:00 | 11:30 | **Tea break** |

| | | |
|---|---|---|
| **11:30** | **12:30** | **Session 4 : Evaluating DSM products** |
| **Dsiscussant** | | **TBD** |
| **Chairperson** | | **Sundar Balakrishna** |
| **Session Secretary** | | **Blandine Lemercier** |
| **D G Rossiter**<br>Soil maps are more than predictors at points and we should evaluate them as such | | |
| **Jonas**<br>Lime–SoDa: An open dataset collection for machine learning in digital soil mapping to improve benchmarking | | |
| **Viacheslav Barkov**<br>A Model-Agnostic Approach for Reliable Uncertainty Estimation in Digital Soil Mapping | | |
| **Kerstin Rau**<br>Quantifying spatial uncertainty to improve the prediction of soil properties in data-sparse regions | | |
| **Laura Poggio**<br>European high resolution soil quality products | | |
| 12:30 | 13:00 | **Discussions** |
| 13:00 | 14:00 | **Lunch** |

| | | |
|---|---|---|
| **14:00** | **15:00** | **Session 5 : Toward operational DSM** |
| **Dsiscussant** | | **P. Lagacherie** |
| **Chairperson** | | **C.P.Reddy** |
| **Session Secretary** | | **Shabir Ahmed** |
| **Blandine Lemercier**<br>Initiatives To Popularize The Use Of Digital Soil Mapping approaches: Challenges and First Lessons In France | | |
| **Giulio Genova**<br>Seedling: A User-Friendly, Scalable, and Collaborative Digital Soil Mapping Workflow | | |
| **Sundar balakrishna**<br>Open Source Software for Digital Soil Map – An Exploratory Study | | |
| **Nirmal Kumar**<br>Design and Development of National Soil Grid of India | | |
| **G.P. Obi Reddy**<br>BHOOMI Geoportal Platform - A robust land resource information system of India for sustainable agricultural land use planning | | |
| **Mark Tinah**<br>Revitalizing the Papua New Guinea Resource Information System and Capacity Development in Digital Soil Mapping. | | |
| **Shree Prasad Vista**<br>Digital Soil Map of Nepal: Uses and Implications | | |
| **Dharumarajan**<br>Digital Soil Mapping in India: history, achievement and perspectives | | |

| | | |
|---|---|---|
| **15:00** | **16:00** | **Short Presentations** |
| **Shabir Ahmed Bangroo**<br>Optimizing Soil Organic Carbon Estimation in Complex Terrains of Kashmir Himalayas Using Machine Learning Techniques | | |
| **Shovik Deb**<br>Soil organic carbon mapping of northern districts of West Bengal | | |
| **Amresh Chaudhary**<br>Advanced Soil Salinity Assessment Using Digital Soil Mapping in Coastal Regions of Gujarat, India | | |
| **Justin George Kalambukattu**<br>High-Resolution Soil Texture Mapping In The Hilly And Mountainous Terrain Of Northwestern Himalayan Region Using Machine-Learning Techniques | | |
| **Sudha Karbari**<br>Enhancing Crop Yield Detection Using Machine Learning: Mapping Soil and Climatic Factors in Mandya District, Karnataka | | |
| **Raj Setia**<br>Estimation of soil organic carbon fractions from hyperspectral data using machine learning and explainable artificial intelligence (XAI) techniques | | |
| **Vikas Sharma**<br>Machine Learning Approach to Mapping Soil Organic Carbon – A Case Study of Jammu District | | |
| **Pravash Chandra Moharana**<br>Digital soil mapping for sustainable agricultural management in the Thar Desert region of India | | |
| **Arijit Barman**<br>Soil Depth Mapping using Digital Soil Mapping Techniques of Arunachal Pradesh, India | | |
| **Dr. R P Sharma**<br>Mapping Key Soil Properties for District-Level Contingency Planning Using DSM: A Case Study of Morena District, Madhya Pradesh, India | | |
| **R.K. Naitam**<br>Evaluating Soil Depth Estimation: A Comparative Analysis of Digital Soil Mapping and Traditional Approaches | | |
| **Vasundhara. R**<br>Evaluation of digital soil mapping approach for predicting soil depth at farm scale-a case study from Karnataka Plateau, India | | |
| **Mahaveer Nogiya**<br>Mapping sub-surface distribution of soil organic carbon in the Hot Arid Region of India Using Machine Learning algorithm | | |
| 16:00 | 16:30 | **Tea break** |
| 16:30 | 17:00 | **Short presentations ( Continued)** |
| 17:00 | 17:30 | **Discussions** |
| 17:30 | 18:30 | **Poster Session 2** |
| 18:30 | 19:00 | **WG Discussions and Indian Pedometrics Discussions** |
| 19:00 | 20:00 | **Conference Dinner** |

| **Thursday (23.1.25)** | | |
|---|---|---|
| **09:00** | **10:30** | **Session 6 : New targets for DSM** |
| **Dsiscussant** | | **Laura Poggio** |
| **Chairperson** | | **Dr. S. Bandyopadhyay** |
| **Session Secretary** | | **George Van Zijl** |
| **Budiman Minasny**<br>Global Digital Mapping of Peatland Carbon Stocks | | |
| **Eucharia Nwaichi**<br>Addressing Sampling Uncertainty in Digital Soil Mapping: Insights from Petroleum Hydrocarbon-Contaminated Soils | | |
| **Zhuodong Jiang**<br>Predicting and mapping the occurrence of mattic layer ruptures in a valley area of Qinghai-Tibet plateau based on UAV measurements | | |
| **Virginia Estévez**<br>Mapping of acid sulphate soil types in Laihianjoki river catchment: A multiclass classsification | | |
| **Quentin Styc**<br>Creating Soil Districts for Australia based on Pedogenon Mapping | | |
| **Srinivasan Ramasamy**<br>Integration of PCA and fuzzy clustering algorithm for delineation of Soil nutrient management zones and Economic analysis of fertilizers in the Arid Region of Deccan Plateau, India | | |
| **Sudipta Chattaraj**<br>Development of High-Resolution Geo-Smart Soil Management Zone as an Agri-Technology Implementation Platform in Eastern Himalayan Foothills of Jalpaiguri District, West Bengal | | |
| **Joshua M. Blackstock**<br>Improving efficiency of determining plant available nutrient concentrations: Implications for digital soil mapping and land use planning in temperate soils | | |
| **Feng Liu**<br>Digital mapping of soil erodibility in China | | |

| | | |
|---|---|---|
| **Amelin Julien**<br>Soil and plant biomass organic carbon stocks assessment and mapping in urban and naturals areas of Rennes metropolitan | | |
| **Dr. Amrita Daripa**<br>Potential Soil Loss Estimation using Machine Learning and Geospatial Technology in part of the Eastern plateau and hill region of West Bengal | | |
| **George van Zijl**<br>Towards a hydrological soil map of South Africa (Hydrosoil) | | |
| 10:30 | 11:00 | **Discussions** |
| 11:00 | 11:30 | **Tea break** |

| 11:30 | 13:30 | Session 7 : Communicating and using DSM products |
|---|---|---|
| **Dsiscussant** | | **José Padarian** |
| **Chairperson** | | **TBD** |
| **Session Secretary** | | **TBD** |
| **Anselme Bertin Takoutsing**<br>Modelling and mapping maize yields and making fertilizer recommendations using uncertain digital soil mapping products as crop model inputs | | |
| **Laura Poggio**<br>Use of quadmap at continental scale | | |
| **P. Lagacherie**<br>What is the best way to communicate the uncertainty of a digital soil mapping product? Some lessons from an end-user survey | | |
| **Asim Biswas**<br>Integrating Digital Soil Mapping and Remote Sensing for Enhanced Soil Moisture Modeling | | |
| **Anilkumar Hunakunti**<br>Mitigating Soil Erosion Risk in NSW: An Approach based on Estimating the Soil's intrinsic Capacity measured by Capacity and Condition | | |
| **Svyatoslav Inozemtsev**<br>Assessing the annual rate of soil erosion in the Central trans-Urals region (upper reaches of the Pyshma River) | | |
| **George van Zijl**<br>Digital soil mapping enables sustainable road network design and off-road driving guidelines in game reserves | | |
| **Peter**<br>Using DSM to Map Northern Australian Soils for Agricultural Suitability | | |
| **Kalaiselvi B**<br>Multi-criteria based land suitability analysis using digital soil mapping derived soil products | | |
| **Udeme Sunday Akpan**<br>Application of Satellite Imagery and Digital Elevation Model in Soil-landscape Mapping for the Cultivation of Orange and Purple Flesh Sweet Potato in Akwa Ibom State, Nigeria | | |
| **Sandra Joy Pabustan Evangelista**<br>Digital Soil Security Assessment: The Capacity of soil to cycle nutrients in the Hunter Valley Wine Growing District, Australia | | |
| **Nicolas Francos**<br>Valuing And Integrating Soil Roles In Assessing The Capital Dimension Of Soil Security: An Australian Case Study | | |
| **Julio Pachon**<br>Mapping the Connectivity Dimension of the Soil Security Assessment Framework | | |
| **13:30** | **14:30** | **Lunch** |
| 14:30 | 15:00 | **Discussions** |
| **Conclusions of the workshop** | | |
| 15:30 | 16:00 | **Presentations of the discussants** |
| 16:00 | 16:30 | **Tea break** |
| 16:30 | 17:00 | **Closing ceremony** |
| **Friday (24.1.25)** | | |
| **Field Trip** | | |

# POSTER PRESENTATION SCHEDULE

| 17:50 | 18:30 | Poster session 1 |
|---|---|---|

| | |
|---|---|
| P-01 | **Lázaro-López**<br>Towards a state-wide monitoring network of soil organic carbon in agricultural soils of Spain |
| P-02 | **Shuo-Peng Zhang**<br>High resolution mapping soil organic carbon and total nitrogen of mattic layers in alpine meadow ecosystem using multi-source information and machine learning |
| P-03 | **Yiqi Lin**<br>Evaluating machine learning methods for predicting surface deposits across physiographic regionsin Sweden |
| P-04 | **Soumik Das**<br>Digital soil mapping for natural resource management |
| P-05 | **Seema Acharya**<br>Assessing spatial variability of soil properties under different land use: Study from two rural municipalities of Surkhet District, Nepal |
| P-06 | **Karthika, K.S**<br>Predicting the soil organic carbon in a semi-arid region of southern Karnataka, India |
| P-07 | **Anand S.**<br>Machine learning-driven soil organic carbon mapping for enhanced watershed management |
| P-08 | **Gopal Tiwari**<br>Prediction of soil depth in coastal plain of Kachchh region of India using advanced machine learning models: Acomparative study |
| P-09 | **Lal Chand Malav**<br>Digital soil mapping of key soil properties for sustainable land use planning in Tapi District of Gujarat |
| P-10 | **Brijesh Yadav**<br>Prediction of soil depth in Central Gujarat region using digital soil mapping approach |
| P-11 | **Promod kumar Sharma**<br>Sensitivity assessment of artificial neural network for soil organic carbon prediction using hyperspectral radiometric data |
| P-12 | **C. Vairavan**<br>Prediction of soil organic carbon content using soil reflected spectra: A comparison of different machine learning models |
| P-13 | **E. Rajath**<br>Integrating PCA and machine learning for assessment and mapping of soil quality index in Cauvery command area of Karnataka |
| P-14 | **C. G. Kusuma**<br>Advancing Soil Nutrient Class Prediction Using Vis-NIR Spectroscopy: A Case Study in Karnataka, India |
| P-15 | **Ternikar Chirag Rajendra**<br>Assessing nearest neighbour models for SOC prediction using VNIR lab spectroscopy |
| P-16 | **A. N. Vinaykumar**<br>Spectro-transfer functions for prediction of soil moisture constants |
| P-17 | **K. Palani Renuka**<br>Leveraging Vis-NIR spectroscopy for subsurface soil property prediction: Insights from Karnataka Plateau |
| P-18 | **Argha Basu**<br>Application of a rapid geophysical sensing method for sustainable extraction of soil as raw material and attaining conservation of fertile soil |
| P-19 | **Siladitya Bandyopadhyay**<br>Advances in remote sensing and GIS application in land resource inventory at cadastral level towards site specific land use planning |
| P-20 | **S. Rama Subramoniam**<br>Soil formation and mapping of Theri lands towards sustainable land use planning |
| P-21 | **P. Nagaseshi Reddy**<br>Land use patterns and their impact on soil biological quality in the IGP |
| P-22 | **S. U. Biradar**<br>Unravelling the association of bacterial communities with carbon and nitrogen dynamics under selected land use systems of semi-arid region |
| P-23 | **U.K. Maurya**<br>Problems and potentials of LRI based soil survey using SOP-Acase study |
| P-24 | **M. M. Jagtap**<br>A spatial analysis of soil micronutrient status in Ajang village, Dhule Tehsil, Dhule District, Maharashtra, using GPS – GIS and assessment of biological properties |
| P-25 | **Nandita Mandal**<br>Evaluation of ecosystem service under conservation agriculture practice in Haryana: quantification and geospatial mapping |

**ICAR-National Bureau of Soil Survey and Land Use Planning, Bengaluru, Karnataka, India**

| 17:30 | 18:30 | Poster session 2 |
|---|---|---|
| P-26 | **Sunil B.H**<br>Land use, soil-landform relationship of Nandurbar District, North Maharashtra | |
| P-27 | **B S Bhople**<br>Soil fertility mapping for physico-chemical characterization of PAU regional research station, Ballowal Saunkhri, Punjab, India | |
| P-28 | **N. Sushma**<br>Spatial variability of nutrients in a watershed: Implications for ecosystem health and management | |
| P-29 | **Manoj Kumar H. S**<br>Decoding soil erosion dynamics with RUSLE and advanced geospatial techniques | |
| P-30 | **Prava Kiran Dash**<br>Enhancing watershed development in Kankadahada MWS Cluster, Odisha: leveraging digital soil mapping and land resource inventory through the LRI-Reward flagship program | |
| P-31 | **Praveenkumar B. Naikodi**<br>Developing decision support system for site-specific management of soil & land towards sustainable enhancement of productivity-A case study | |
| P-32 | **Ravi Kumar**<br>Exploring land degradation using trends. Earth: Insights from a research farm in Himalayan foothills | |
| P-33 | **Kuthumbare R. S**<br>Digital Soil Map of VNMKV farm, Parbhani by using remote sensing and GIS techniques | |
| P-34 | **Biradar, I. B**<br>GIS-driven assessment of soil fertility and strategies for health improvement in watershed areas | |
| P-35 | **Ravikumar D**<br>Integrated RUSLE and geospatial analysis for quantifying and mapping soil erosion risk in tarikere taluk, Chikkamagaluru District, Karnataka | |
| P-36 | **Thippeshappa, G. N**.<br>Assessment of soil fertility status and nutrient management approaches for sustainable agriculture using geospatial techniques in Vaderahalli Subwatershed of Challakere Taluk | |
| P-37 | **Prabha Susan Philip**<br>Soil fertility mapping of selected panchayats in Palakkad region of Kerala | |
| P-38 | **Shunhua Yang**<br>Vertical distribution and influencing factors of deep soil organic carbon in a typical subtropical agricultural watershed | |
| P-39 | **Lu Miao**<br>How does soil salinization affect crop planting structures? | |
| P-40 | **Nandita Mandal**<br>Evaluation of ecosystem service under conservation agriculture practice in Haryana: quantification and geospatial mapping | |
| P-41 | **Vanitha Thurairasu**<br>Balancing chemical fertilizer use and organic manure for sustainable crop production in Asian agriculture: A spatial analysis | |
| P-42 | **T. S. Sindhushree**<br>Assessing soil carbon sequestration potential using RothC model under future climate change scenarios | |
| P-43 | **D.S. Mohekar**<br>Integrating geospatial tools with traditional methods for soil suitability analysis of orange cultivation in Central India | |
| P-44 | **IS. Ramachandran**<br>Optimizing soil fertility for sustainable horticultural production: A case study | |
| P-45 | **S. C. Ramesh Kumar**<br>Land Resources Information User Needs in India | |
| P-46 | **Biradar, I. B**<br>Crop suitability and soil fertility mapping using Geographic Information System (GIS) in Basapur micro-watershed of north Karnataka (Vijayapura) | |
| P-47 | **Roomesh Kumar Jena**<br>Land Resource Inventory (LRI) of arable land in Kolasib district, Mizoram using geospatial techniques | |
| P-48 | **Lalitha, M**<br>Modelling soil depth variations using legacy soil data and quantile regression forests | |
| P-49 | **N.K. Rajesh Kumar**<br>Digital soil mapping and Hydrology integration for sustainable water resource management and Land Use Planning | |
| P-50 | **S. Gupta Choudhury**<br>Characterization and Mapping of Alluvial Soils to Establish Soil-Landform Relationship in Lower Indo-Gangetic Plains of West Bengal | |
| P-51 | **Sudha R Karbari**<br>Optimizing Soil Property Mapping with Spectral Data and Machine Learning: A Comprehensive Approach to Accurate Predictions | |
| P-52 | **Dharani, S**<br>Spatial prediction of soil total nitrogen under different land use of central Kerala using remote sensing indices | |