wageningen soil conference 2023

WORKING TOGETHER ON SOLUTIONS FOR A SUSTAINABLE WORLD

PROGRAMME

Wageningen Soil Conference 2023
Wageningen Campus

ISRIC
World Soil Information

DAY 1 - Tuesday 29th August

7:30	*Registration & poster placement, Aurora entrance*
8:15	**Opening WSC2023** Welcome by Mathilde Hagens (chair Wageningen Soil Conference) and Floor Vermeulen (mayor Wageningen) *Aurora, C9119+C9120*
	Soil for society Chair: Jakob Wallinga (Wageningen University & Research) *Aurora, C9119+C9120*
8:30	**Keynote: Soil for society** *Peter Groffman (City University of New York)*
9:15	**Carbon farming: Are soil carbon certificates a suitable tool for climate change mitigation?** *Carsten Paul et al*
9:30	**Climate-robust nitrogen management in agricultural fields** *Tom Coussement et al*
9:45	**A composite index of field-scale sustainability to support farm to fork efforts** *Shai Sela et al*
10:00	**How to use soil threats bundles to assess the effects of climate change and land use changes at EU scale** *João Coblinski et al*
10:15	*Coffee break & poster placement, Aurora 1st floor*

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DAY 1 - Tuesday 29th August

PARALLEL SESSIONS				
	Location: Aurora, room B9110 + B9111	*Location: Aurora, room B9210 + B9211*	*Location: Aurora, room B9216 + B9218*	*Location: Aurora, room C9119*
	Soil and land degradation and development Chair: Geoffroy Sere	**Soil quality and health** Chair: Peter Groffman	**Soil and land management** Chair: Ingrid Lubbers	**Soils in decision-making and policies** Chair: Jakob Wallinga
10:45	**Recovery and resistance of soil fungal communities in ecological and conventional grasslands under altered rain regimes** *L. Martínez-García et al*	**A new pedoclimatic-context-aware soil health diagnosis methodology to evaluate the impact of management practices** *C. Calvaruso et al*	**Edafoagroclimatic evaluation of typical argiustol and typical ustipsament in the Argentine semi-arid chaco** *D. Prieto et al.*	**Carbon for soils, not soils for carbon** *G. Moinet et al*
11:00	**Microbial communites in soils of Russian Arctic** *M. Korneykova et al*	**Impacts of Diverse Cover Crop Mixtures on Soil Health and Soil Microbial Communities in East Central Ontario** *M. Rangaiev et al*	**Optimization of manure allocation in view of crop requirements and environmental impacts in Chinese agriculture** *Weikang Sun et al*	**Building a hospital for soil health diagnosis and treatment: a modelling approach** *Yizan Li et al*
11:15	**Soil degradation in response to more persistent precipitation regimes** *O. Vindušková et al*	**Let's get real on regenerative agriculture: How do we assess soil health?** *M. Pulleman et al*	**Using random forest to determine the importance of soils in influencing yields in rice-wheat systems in the Indo-Gangetic Plain** *K. Krishnan et al*	**Using a pathways approach to provide policy support for sustainable and profitable agriculture** *H. van Delden et al*
11:30	**The role of soils in carbon sequestration by urban green infrastructures: a university campus case study** *R. van Velthuijsen et al*	**Unlocking the Potential of Knowledge Graphs for Soil Health Monitoring and Management** *B. Blažica et al*	**Drivers and pathways for future soil management and soil health** *K. Helming et al*	**PRESS II project – from soil data towards sustainable land use planning** *E. Zocpe et al*
11:45	**Nature-Based Solutions for Addressing Salt Intrusion and Accumulation on Boro Crop Fields: Innovations by a Local Community through Research and Practices in Southern Bangladesh** *Md Zakir Hossain et al*	**Soilguard Project to assess and safeguard Mediterranean agro-environments** *L.D. Olivares-Martinez et al*	**Land use change overrides the effect of management type on soil microorganisms** *H. Mancini Teixeira et al.*	**Soil and water conservation in China: challenges and innovations** *Guobin Liu et al*

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DAY 1 - Tuesday 29th August

12:00	**Lunch and Poster session** *Aurora ground floor (lunch), Aurora 1st floor (posters)*
SFS1	**BreakThru (wetting agent) and Fontelis (fungicide) change the life-history of Folsomia candida (Collembola) and affect soil respiration in different climate scenarios -** *B. Szabó and J. Filser*
SFS2	**Temporal evolution of soil salinity in Bas-Cheliff -Algeria -** *Mouloud Ait Mechedal et al*
SFS3	**Sustainable Carbon Management in Urban Soils for promoting Soil Ecosystem Services and Soil Health –** *A. Movassagh et al*
SFS4	**Environment-relevant concentrations of lithium influence soybean development via metabolic reprogramming -** *N. Shakoor et al*
SFS5	**Flexible framework for soil health indicator selection -** *C. Vazquez and R. Creamer*
SFS6	**Evaluation of soil quality through arthropod bioindicators -** *M. Duarte et al*
SFS7	**The effect of soil properties on the overgrowth of dominant tree species on former agricultural land in the southeast region of Latvia -** *K. Afanasjeva et al*
SFS8	**Soil acidification and declining soil health- major constraints of sugarcane productivity improvement in China -** *Ting Luo et al*
SFS9	**Impacts of different cacao (Theobroma cacao L.) agroforestry arrangements and farming systems on soil biodiversity in the Ecuadorian Amazon -** *M. M. Bragadini et al*
SFS10	**Understanding biological measurement of Soil Health -** *F. David et al*
SFS11	**Characteristics and functioning of grassland peat soils in Friesland, The Netherlands –** *C. Kraamwinkel et al*
SFS12	**Diversity of carabids in two intensive crop systems in Portugal (Ribatejo region): monoculture vs crop succession -** *E. Valerio et al*
SFS13	**Improving soil health through sustainable practices in rice-wheat systems in the Indo-Gangetic plain -** *K. Krishnan et al*
SFS14	**Capability of selected indicators for soil organic carbon stability to explain soil functions -** *G. Koorneef et al*
SFS15	**Characterization of soil bacterial profiles in extremely acidic forest soils -** *M. Rousseau et al*
SFS16	**Implications of sustainable soil management practices on energy use -** *M. Aghabeygi et al*

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DAY 1 - Tuesday 29th August

SFS17	**Vertical carbon distribution and soil profile changes under different compost application rates over time in oil palm plantations -** *Yu Yang Chang et al*
SFS18	**Effect of leguminous green manure crops on soil health, tomato production, and nutritional quality –** *L. Pawera et al*
SFS19	**Effects of sustainable management practices on health and biodiversity soil in agricultural ecosystems –** *S. Tienda et al*
SFS20	**Ground cover management and climatic conditions affect soil fauna abundance and community structure in stone fruit orchards** - *S. Accondia et al.*
SFS21	**Cover crops improve stabilization of soil structure and their associated organic carbon in dry woody agroecosystems -** *N. García-Franco et al*
SFS22	**Sensational reduction of ammonia volatilization loss by organic and mineral soil covering systems in potato cultivated soil -** *Eun Mi Lee et al*
SFS23	**Biochar application as a sustainable strategy for enhancing carbon balance, soil properties and fruit productivity in red pepper cultivated upland soils -** *Sohee Yoon et al*
SFS24	**Organic matter, soil biodiversity and agriculture -** *P. Van Vliet et al*
SFS25	**Can agroecological management enhances soil biology and resolve the soil compaction problem in Thailand ? A soil physic parameters study -** *E. Peiffer et al*
SFS26	**Crop yield response to long-term reduced tillage in a conventional and organic farming system on a sandy loam soil -** *D. van Balen et al*
SFS27	**Reducing aluminum is the key nutrient management strategy for ameliorating soil acidification and improving root growth in an acidic citrus orchard -** *Siwen Zhang et al*
SFS28	**Can biochar-amended soils mitigate land degradation from runoff and soil erosion by water? A global scale meta-analysis-** *B. Gholamahmadi et al*
SFS29	**Impacts of different management practices and site conditions on soil acidification rates in long-term experiments -** *Xingjuan Zhu et al*
SFS30	**Agronomic drivers and constraints for soil carbon sequestration in Europe -** *M. Vidal et al*
SFS31	**Winter cover crops (WCC) in Santiago del Estero: II water dynamics and soil available water for the next crop -** *D. Prieto and C. Angueira*

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DAY 1 - Tuesday 29th August

SFS32	**Bokashi promotes general arable soil disease suppressiveness in short term but not in long term –** *M. van der Sloot et al*
SFS33	**Two multi-year public private partnerships support Dutch farmers in the transition toward regenerative agriculture -** *M. In T Zandt et al*
SFS34	**Towards soil classification for sustainable land use planning in the North and Adamawa Regions, Cameroon -** *L. Krauß et al*
SFS35	**Performance: open hands -** *C. Angueira*
SFS36	**Challenges for soil protection in road construction from the perspective of European road and soil experts -** *T. Geiges and S. Tobias*
SFS37	**Tailoring or tinkering: the theoretical potential for soil-specific crop nutrient adjustments -** *J. van Heerwaarden*
SFS38	**Soil health for agricultural fields: a comparison of concepts -** *U. Menke and M. Marx*
SFS39	**Effect of cover crops in soil carbon storage -** *M. Pacheco Ferreira et al*
SFS40	**Decline in soil quality by niche construction by two ectomycorrhizal truffle species -** *L. G. Garcia-Montero et al*
SFS41	**Water and yield deficit maps for the rainfed agriculture in Santiago del Estero, Argentina -** *D. Prieto et al*
SFS42	**SOILGUARD transdisciplinary research: Network of Knowledge and the different approaches for engagement in soils -** *A. G. Ramirez-Santos and C. Y. Lopez*
SFS43	**Reducing the footprint of agriculture: the design of a Soil Footprint Calculator -** *B. B. Noszály et al*
SFS44	**Enhancing resilience of sandy soil landscapes in the Netherlands through optimized land parcel sizes and management practices -** *E. Farzanegan*
SFS45	**Impact of mechanised sugarcane harvesting on the structural quality and carbon stock in dystrophic red Latosol in Minas Gerais, Brazil -** *M. G. dos Santos Gomes et al.*
SFS46	**Winter cover crops in Santiago del Estero: I Biomass, evapotranspiration and water use efficiency -** *D. Prieto and C. Angueira*
13:30	**Masterclasses (see table on following page)**

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MASTERCLASSES – Tuesday, August 29				
	Theme 1: Soils for Society	*Theme 2: Advances in measuring and modelling soil processes*	*Theme 3: Mapping and evaluation of soil functions across scales*	*Theme 4: Soils for nature-based solutions*
	M1: Hands in the mud *Aurora B9010, outside*	M4: Practical application of fusing spectroscopic techniques in routine soil analysis: Lab-in-a-Box (LiaB) *Aurora, P9318*	M8: Topical Discussion on Functional Biogeography *Aurora, B9111*	M10: Enabling Carbon farming: a hands-on masterclass on soil carbon monitoring *Aurora, B9210*
	M2: Mapping Soil Communities Using the Expanded Soil Profile *Aurora, B9110*	M5: Comparability and compatibility (soil) data for food forest monitoring* *Excursion (departure 12:15)*		M11: Development pathways towards a sustainable soil system *Aurora, B9211*
	M3: Transformative Soil Science: who am I in relation to my research? *Aurora, I9236*	M6: Plastic analysis in soil: from the field to the laboratory analysis and results *Gaia, Gaia 2*		M32: Mitigating Soil Erosion: Effective Strategies and Sustainable Solutions *Aurora, B9216*

16:30	**Break, posters' removal and group photo**
17:00 - 19:00	**Human Bingo** *Aurora, ground floor*

End of Day 1

DAY 2 - Wednesday 30th August

8:00	*Registration & poster placement, Aurora entrance*
	Advances in measuring and modeling soil processes Chair: Loes van Schaik (Wageningen University & Research) *Aurora, C9119+C9120*
8:30	**Keynote: Measuring and modeling soil carbon and greenhouse gas emissions** *Debjani Sihi (Emory University)*
9:15	**MiNiMAX – Making maximum use of nitrogen mineralisation from soil organic matter** *Annemie Else et al*
9:30	**Can combinations of organic and inorganic amendments effectively reduce potato tuber-Cd?** *Yuwei Qin et al*
9:45	**Traditional versus flux-based plant available water: a stochastic interpretation applied to Brazilian soils** *Quirijn de Jong van Lier and Marina Luciana Abreu de Melo*
10:00	**Soil colonization of fungal amendments improves soil aggregation and soil physical properties different contrasting moisture conditions** *Violeta Angulo et al*
10:15	*Coffee break & poster placement, Aurora 1st floor*

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DAY 2 - Wednesday 30th August

PARALLEL SESSIONS				
	Location: Aurora, room B9110 + B9111	*Location: Aurora, room B9210 + B9211*	*Location: Aurora, room B9216 + B9218*	*Location: Aurora, room C9119*
	Soil contamination Chair: Naresh Kumar	**Soil-plant interactions** Chair: Carmen Vazquez Martin	**Nutrients in soil** Chair: Walter Schenkeveld	**Soil carbon** Chair: Gabriel Moinet
10:45	**Microplastics in a chronosequence of biosolid-amended agricultural soil in Southern Ontario, Canada** *H. Walker and J. Aherne*	**Temperature dependence of the breakdown of soil aggregate with transport of released particles in soil** *Gang Cao*	**Modelling nutrient cycle in European agricultural soils including agricultural management scenarios** *A. Muntwyler et al*	**Methane and nitrous oxide emissions from different vegetation communities in three tidal marshes located along the Elbe estuary's salinity gradient** *F. Lexmond et al*
11:00	**The impact of hormones on below ground interactions** *E. Jongedijk et al*	**Sensitivity analysis and calibration of an upscaled microscopic root water uptake model by inverse modeling** *M. L. A. de Melo et al*	**Liebig or Mitscherlich?** *R. Hijbeek et al*	**Integrating biological and chemical soil processes towards predicting the climate-carbon feedback at the European scale** *K. M. Moran Rivera et al*
11:15	**Uncertainty analysis of geochemical multi-surface models for solid-solution partitioning and speciation of heavy metals in soils** *W. Wiersma et al*		**The phosphorus saturation degree as a universal agronomic and environmental soil P test** *M. van Doorn et al*	**The effect of landscape position and soil texture on decomposition of added exogenous organic matter via moisture control during a wet summer** *A. Francoys et al*
11:30	**Urban Soils and Trace Metal(loid) Contamination by Atmospheric Deposition in Community Vegetable Gardens** *S. Engel-Di Mauro et al*	**Validating the RothC model with long-term experiments in dryland areas of China** *Zhibiao Wei et al*	**Mitigating nitrogen losses from manured agricultural soils: the impact of manure plasma activation** *S. Kuśmierz et al*	**Unexpected high increase of greenhouse gas emissions impact with increasing soil carbon saturation degree in rice paddy** *So-Yeong Park et al*
11:45		**Response of root properties and soil enzyme activities to biodegradable microplastic in contaminated soil** *Yao Yu et al*		

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DAY 2 - Wednesday 30th August

12:00	**Lunch and Poster session** *Aurora ground floor (lunch), Aurora 1st floor (posters)*
AMS1	**Plastic mulch and pesticides residues effects on the lettuce growths -** *N. Beriot et al*
AMS2	**Impacts of antibiotics in manure on soil nitrogen cycling -** *Zhongchen Yang et al*
AMS3	**How does microplastic pollution affect plant-soil system under different soil moisture contents? –** *A. Wang et al*
AMS4	**A mechanistic understanding of cadmium behavior in tropical cacao soils -** *W. Wiersma*
AMS5	**Temporal variability in soil microbial communities in response to microplastics -** *G. P. F. Macan et al*
AMS6	**Do microplastics in vineyard soil affect the bioavailability of vine nutrition? -** *E. Jez et al*
AMS7	**Wind erosion of microplastics from urban soil surfaces -** *I. Leitão et al*
AMS8	**Assessing the plastic contamination in agricultural soils: a protocol from nano to macro implemented in 220 fields across Europe -** *N. Beriot et al*
AMS9	**The MiCoS project: microplastic detection in agricultural soils in relation to soil and plant health –** *C. De Tender et al*
AMS10	**Visual and spectral identification of microplastic particles from soil matrices: a comparison between Stereomicroscope, FTIR and LDIR methods -** *S. Rebisz et al*
AMS11	**Aquifer recharge for irrigation and wastewater treatment -** *D. Tang et al*
AMS12	**Plastic mulch degradation: Could we optimize plastic degradation in soil? -** *D. R. Munhoz et al*
AMS13	**Sensitivity analysis of transpiration reduction in soybean due to aeration stress under shallow water table scenarios -** *L. R. Quiñónez Vera and Q. de Jong van Lier*
AMS14	**Changes of soil organic carbon stocks and aggregation in Alpine and pre-alpine grassland soils in a changing climate -** *N. García-Franco et al*
AMS15	**The mechanised sugarcane hasrvesting and its effects on the soil attributes and root development of the crop -** *M. G.Dos Santos Gomes et al*
AMS16	**A novel soil pore three-dimensional segmentation method combining U-Net and LSTM based on computed tomography image -** *Lei Liu et al* *(poster presentation moved to Thursday)*

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DAY 2 - Wednesday 30th August

AMS17	**Phosphorus recovery from wastewater as a circular economy approach to enhancing soil fertility –** *T. Ayeyemi et al*
AMS18	**Conceptual overview of burrowing animals as actors of landscape change -** *M. Loreggian et al*
AMS19	**Effects of superhydrophobic sand mulches on steady-state water evaporation fluxes -** *Amr Al-Zu'Bi et al*
AMS20	**ACFTransUNet: a dense-connection multi-category three-dimensional identification model combining Transformer and CNN for soil pores -** *Meihui Song et al*
AMS21	**Combined stress response of indigenous and alien plant species in temperate ecosystems -** *M. Rolando et al*
AMS22	**Wheat-Faba bean intercrops improve plant nutrition, yield, and availability of nitrogen (N) and phosphorus (P) in soil -** *G. Kaci and W. Ouaret*
AMS23	**Companion plants influences on soil physicochemical and microbial characteristics in organic raspberry crop -** *A. Moţ et al*
AMS24	**Impact of different types of nitrogen fertilizers on greenhouse gas emissions and cabbage productivity in an upland field during cultivation -** *H. An et al*
AMS25	**Flooding-induced N2O fluxes can be attenuated by plant communities -** *A.S. Barneze et al*
AMS26	**Comparing the performance of P Olsen and P saturation degree in predicting crop yields and P leaching risks using long-term P fertilization experiments-** *Yu Gu et al*
AMS27	**Modelling nitrogen dynamics of a long-term fertilization agricultural soil to tackle fertilizer losses –** *P. A. Rojas Pinzon et al*
AMS28	**The effect water management on iron plaque formation and phosphorus availability to rice –** *S. Martinengo et al*
AMS29	**Linking manure composition to manured soil emissions of ammonia and greenhouse gases –** *S. Kuśmierz et al*
AMS30	**Root trait complementarity improves yield of ryegrass (Lolium perenne L.) and tall fescue (Festuca aurundinacea Schreb.) in a low P soil -** *A. Velasco Sanchez et al*
AMS31	**Nutrient bioavailability by weathering process in Cauvery river basin, South India -** *Deepika Pandey*
AMS32	**Rhizobox studies to investigate rhizosphere processes that lead to yield decline in successive winter wheat crop rotations -** *N. Kaloterakis et al*

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DAY 2 - Wednesday 30th August

AMS33	**Assessing the effect of arable management practices on carbon storage and -fractions after 24 years in Boreal conditions -** *A.-R. Salonen et al*
AMS34	**Evaluating carbon sequestration of different alternative management practices in the Netherlands –** *J. Schepens et al*
AMS35	**A new value of silicate fertilizer as a soil amendment to mitigate greenhouse gas emission impact and improve rice productivity -***Snowie Jane C. Galgo and Pil Joo Kim*
AMS36	**Evaluation of the effect of biochar on mitigating the net GWP in the whole process of rice cropping –** *So-Yeong Park et al*
AMS37	**Soil organic matter fractions and soil carbon storage as affected by forest type and climate change –** *V. Jílková et al*
AMS38	**Strong reduction of greenhouse gas emissions by shifting transplanting dates without significant loss of productivity in a rice paddy field-** *Yeomyeong Lee et al*
AMS39	**Effects of plastic film mulching and stover recycling on soil organic carbon stock changes in maize cropping system -** *Ho Gyeong Chae et al*
AMS40	**Elucidating the interactions between belowground C allocation and iron cycling in the rice rhizosphere and implications for methane emissions -** *A. Ehlinger et al*
AMS41	**Compositional and structural changes of organic matter during commercial hall composting assessed by humic substances fractionation and py-GC-MS -** *N. Quist et al*
AMS42	**Defining emission and scaling factors for predicting methane emissions and inventories from Italian rice paddies using country-specific datasets -** *L. Crosetto et al*
AMS43	**A comparison of LI-COR 7820 N2O/H2O analyzer and manual static-chamber for measuring N2O emissions from agricultural soils -** *Meng Kong et al*
AMS44	**The green areas of the city of Barcelona as carbon sinks: a pilot study -** *S. Poblador et al*
AMS45	**Can soil quality monitoring networks be used for assessing changes of bulk density? A case study in France -** *J.-L. Munera-Echeverri et al*
AMS46	**The effect of pH on dissolved organic matter fractions in solid waste -** *F. van Raffe and R. Comans*
AMS47	**Assessing the soil respiration in soils treated with composts with varying C: N ratios -** *N. Nakwafila*

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DAY 2 - Wednesday 30th August

AMS48	**Can selective use of forage species improve soil quality in subtropical smallholder farming –** *N. Wickander et al*
AMS49	**Towards a model of forest soil carbon dynamics under tree species composition shift -** *O. Vindušková et al*
AMS50	**The interplay of biotic and abiotic processes that stabilizes soil organic carbon during water erosion –** *Nan Zhang and E. Morriën*
AMS51	**Soil structure changes over time, and it matters! -** *A.-C. Renard et al*
AMS52	**The effect of carbon produced by methane plasmalysis (CMP) on bioavailable nutrient fractions in soils –** *N. Abu Zahra et al*
AMS53	**Microplastic Transport in soil columns as Affected by Irrigation Intensity -** *R. S. Tehrani et al*
13:30	**Masterclasses**

MASTERCLASSES – Wednesday, August 30				
	Theme 1: Soils for Society	*Theme 2: Advances in measuring and modelling soil processes*	*Theme 3: Mapping and evaluation of soil functions across scales*	*Theme 4: Soils for nature-based solutions*
	M12: How to cheat when assessing sustainability impacts *Aurora, B9010*	M15: Hands-on tutorial SWAP model *Forum, PC0713+PC0717*	M18: Holistic soil health evaluation of agricultural fields with BLN 2.0 / Open Soil Index *Aurora, B9211*	M21: Tropical soils and food security in times of extreme weather events *Aurora, B9259*
	M13: From the field to the frame: painting with your soil! *Gaia, Gaia 2*	M16: Soil fertilization with micronutrients and inspiring practical tests with chelates to prove their function *Aurora, B9210*	M19: Digital soil mapping in 3D space and time: a hands-on tutorial *Aurora, B9216*	M22: Carbon farming *Aurora, B9260*
	M26: Pesticide residues in soil – prioritization of compounds to health assessment and mixture data analysis *Aurora, B9111*	M17: Assessing plastic fate in soil *Aurora, B9110*		

16:30	**Break, posters' removal and time to walk to Omnia**
17:00 - 19:00	**Young scientists pitches "Rising Soil Stars"** *Omnia, the Podium*

End of Day 2

DAY 3 - Thursday 31st August

8:00	*Registration & poster placement, Aurora entrance*
	Mapping and evaluating soil functions across scales Chair: Jetse Stoorvogel (Wageningen University & Research/ Open University) *Aurora, C9119+C9120*
8:30	**KEYNOTE: Challenges to provide cross scale soil function maps for soil policy** *Madlene Nussbaum (Bern University of Applied Sciences)*
9:15	**3D+T mapping reveals soil organic matter changes between 1953 and 2022 at 25m resolution in the Netherlands** *A. Helfenstein et al*
9:30	**Field history matters: the effect of spatiotemporal dynamics and management practices on the soil bacterial and fungal communities in two agricultural fields** *Lisa Joos et al*
9:45	**Detection of soilcompaction effects on crop growth using drone images** *A. Vanderhasselt et al*
10:00	**Development and testing of site-specific fertiliser formulations for crops in sub-Saharan Africa** *Johan Leenaars et al*
10:15	*Coffee break & poster placement, Aurora 1st floor*

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DAY 3 - Thursday 31st August

PARALLEL SESSIONS				
	Location: Aurora, room B9110 +B9111	*Location: Aurora, room B9210 + B9211*	*Location: Aurora, room B9216 + B9218*	*Location: Aurora, room C9119*
	Soil monitoring and mapping Chair: Jannes Stolte	**Soil in space and time** Chair: Jetse Stoorvogel	**Remote and proximal sensing** Chair: Titia Mulder	**Modeling over scales** Chair: Loes van Schaik
10:45	**Interpreting and evaluating digital soil mapping prediction uncertainty: a case study using texture from SoilGrids** *G. Heuvelink et al*	**Resampling soil physical libraries at three decades of interval for studying soil changes across Swiss habitats** *S. Semeraro et al*	**Sentinel-2 Imagery for Monitoring Exogenous Organic Matter Fertilizers on Winter Wheat Crop: Proximal and Satellite Approaches** *M. Dodin et al*	**A novel soil pore three-dimensional index integrating angle factor and anisotropy** *Lei Liu et al*
11:00	**Effects of modern and historic landscape context on soil fungal diversity of arable fields** *T. Vahter et al*	**Estimating soil organic carbon stock change at regional scales: Challenges and possible solutions** *G. Szatmári et al*	**Integrated crop and soil organic matter model for arable cropping systems** *I. A. Tougma et al*	**Investigating the issue of imbalanced datasets in larger-scale mapping of soil properties from Earth observation data** *N. Tziolas et al*
11:15	**Mapping soil carbon and organic soil condition in Scotland** *M. Aitkenhead et al*	**The potential of integrating process-oriented model into machine learning framework for soil carbon modelling in space and time: a case study in a cropland area in China** *Lei Zhang et al*	**A new approach to predict nutrient content in Costa Rican soils using V-NIR spectroscopy and machine-learning** *J. Perret et al*	**Linking soil aggregate stability with soil erosion at catchment scale: the ESTABLE-project** *D. Feldmann et al*
11:30	**Improving cropland N, P and K nutrient budgets through local and global data** *C. Ludemann et al*	**Synthesizing recent advances in understanding spatial and temporal dynamics of phosphorus cycling in soil** *J. Helfenstein et al*	**Root electrical capacitance indicates wheat nutritional status and predicts grain yield non-destructively** *I. Cseresnyés et al*	**Geospatial modelling of soil phosphorus fractions and sorption indicators using geochemical survey data from wide-scale heterogeneous landscapes** *R. L. Hall et al*
11:45		**Visualizing heterogeneous microenvironments: in-situ application of planar optodes in agricultural soils** *M. R. Rasmussen et al*	**Advanced screening methods for potential soil pollution introduced via biobased fertilizers** *B. Jansen et al*	**Advancing the spatial characterization of peat layers through probabilistic 3D modelling** *P. De Weerdt et al*

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DAY 3 - Thursday 31st August

12:00	**Lunch and Poster session** *Aurora ground floor (lunch), Aurora 1st floor (posters)*
MSF1	**Mapping land suitability for agriculture in Europe's humid continental climate -** *A. Dornik et al*
MSF2	**Towards effective sampling for nutrients' predictive mapping in farm-scale crop management -** *J. Skála et al*
MSF3	**Understanding the drivers of nematode functional diversity across Europe -** *D. Mani et al*
MSF4	**Evaluation of soil properties maps produced with Convolutional Neural Networks and Random Forest: pointwise and contextual pattern analysis -** *G. Genova et al*
MSF5	**Updated map of organic soils in Germany -** *M. Wittnebel*
MSF6	**SOIL O-LIVE EU Horizon Programme: The Soil Biodiversity and Functionality of Mediterranean Olive Groves: WP3 Soil Erosion and Land Degradation -** *G. Moreno et al*
MSF7	**Contribution of different error sources on the prediction accuracy of spectral models -** *C. van Leeuwen et al*
MSF8	**Updating soil organic carbon prediction map of Tcheboa, North Region of Cameroon through including new data -** *C. Nguemezi et al*
MSF9	**Mapping soil organic carbon stock of an alpine valley (Valchiavenna, Northern Italy) -** *S. Agaba et al*
MSF10	**Water holding capacity maps in the Rio Dulce irrigated area, Santiago del Estero, Argentina –** *C. Angueira et al*
MSF11	**Soil genesis, its classification and large-scale mapping in complex glacial topography -** *B. Dirnena et al*
MSF12	**How to address the lack of soil mapping in Charo Americano, Santiago del Estero, Argentina -** *C. Angueira et al*
MSF13	**Monitoring soil organic carbon in Flanders (Belgium): network set-up and first results -** *F. Amery et al*
MSF14	**A systematic approach to predicting and mapping soil particle size distribution from unknown samples using large mid-infrared spectral libraries covering large-scale heterogeneous areas -** *F. de Santana et al*
~~MSF15~~	~~**Combining object-based image analysis with topographic data for landform mapping: a case study in the semi-arid Chaco ecosystem, Argentina -** *I. Castillejo González et al*~~
MSF16	**Operationalizing soil spectral libraries: a case study for soil carbon in peat soils of Switzerland –** *A. Helfenstein et al*

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DAY 3 - Thursday 31st August

MSF17	**Remote sensing of cover crop legacies on soil health and main crop N-uptake dynamics -** *N. Vavlas et al*
MSF18	**Hybrid modelling of soil organic carbon in space and time to improve soil health assessments –** *Yuqing Lai et al*
MSF19	**Yield performance zones to account for variation in soil carbon and soil health across farm -** *D. Clarke et al*
MSF20	**Comprehensive assessment of mechanical soil augering systems for in-situ soil description and sampling -** *S. Tanner et al*
MSF21	**Accuracy and sensitivity of NH3 measurements using the Dräger Tube method -** *A. Kelsch et al*
MSF22	**Dynamic monitoring of NDVI in agronomic testing of agro crops using an unmanned aerial vehicle –** *M. Kussainova et al*
MSF23	**Optimizing manure recycling rates to balance crop requirements, mitigate soil acidification and minimize nutrient losses at regional level -** *Donghao Xu et al*
MSF24	**Accurate and efficient mapping of soil texture: Direct or indirect approach? -** *Zhuodong Zhang and Yuhe Shen*
MSF25	**A weakly supervised pore segmentation method based on traditional segmentation algorithm –** *Yinkai Fu et al*
MSF26	**Using multisensory and multitemporal Sentinel satellite imagery together with in-situ measurements for soil erosion mapping -** *M. Virghileanu et al*
MSF27	**Semi-supervised segmentation of multi-scale soil pores based on a novel receptive field structure –** *Yinkai Fu et al*
MSF28	**Soil organic carbon prediction and mapping using airborne hyperspectral and Sentinel-2 multispectral data: effect of soil texture -** *V. Khosravi et al*
MSF29	**Inter-layer interpolation for soil CT images based on CNN and optical flow -** *Hao Bai et al*
MSF30	**New extractive technique for stony soil monoliths -** *J. Panisello et al*
MSF31	**Soil data rescue operations in support of national and global soil information: lessons from the Coalition of the Willing (CoW) for data sharing in Ethiopia -** *A. Ali et al*
MSF32	**Prediction of soil properties in a deep Colluvisol profile using VNIR hyperspectral imaging -** *D. Žížala*

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MSF33	**Quality and safety assessment of fertilising products derived from fishery waste and by-products –** *Jingsi Zhang et al*
MSF34	**Permacultural raised bed composition impacts yields and soil properties: results of a 3-years trial –** *C. De Clerck et al*
MSF35	**Biochar enhances tomato (Solanum lycopersicum) plant yields in alkaline sandy soils-** *N. V. H. Musskopf et al*
MSF36	**Relationships between soil properties in multifunctinal cropping system –** *A. Rudinskienė and A. Marcinkevičienė*
MSF37	**Evaluation of wool-based mulches as an alternative to plastic geotextile -** *M. Dincher et al*
MSF38	**Biofertilisers and organic soil amendments might sustain nutrient cycling and microbial diversity –** *K. M. Shamsul Haque et al*
MSF39	**Engineering cation exchange capacity of date palm biochar for soil amendment -** *B. Albar et al*
MSF40	**LivinGro: preserving and improving microbial biodiversity with a sustainable agriculture -** *S. Tienda et al*
MSF41	**Effect of biochar and superhydrophobic sand mulches on evaporation and water holding capacity in sandy soils -** *L. Oki Exposito et al*
MSF42	**Investigating the susceptibility of soils to microbial nitrogen-mining across a subarctic ecotone –** *A. Rzepczynska and L. Hicksl*
MSF43	**Drivers of bioturbation patterns and the role of bioturbators in modulating soil nutrient availability across climate gradients -** *D. Kraus et al*
MSF44	**Island formation by the earthworm Aporrectodea caliginosa -** *R. de Goede and F. van den Berg*
MSF45	**Complementarity of DNA- and fatty-acid based methods in a nation-wide soil biodiversity monitoring study** *I. Hiiesalu et al*
MSF46	**Predation as regulator in eroding permafrost soil revealed through totalRNA sequencinge -** *M. Scheel et al*
MSF47	**Perennial intermediate wheatgrass improve soil microbial biomass, community composition, and soil fertility -** *Shoujiao Li*
MSF48	**Factors influencing the microbial communities associated with wild plants in alkaline-saline soils –** *D. Randi et al*

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DAY 3 - Thursday 31st August

MSF49	**Soil management influences the network among soil communities and their associated functions -** *Chenguang Gao et al*
MSF50	**Root traits explain multitrophic interactions of belowground microfauna on soil nitrogen mineralization and plant productivity -** *Junwei Hu et al*
MSF51	**Influence of rhizodeposition on the assembly of maize microbiota -** *D. Niedeggen*
MSF52	**Plant-microbe interactions for growth enhancement increased under long-term silicate fertilization in paddies -** *Chang-Hoon Lee et al*
MSF53	**The effect of microbial inoculation on soil physical properties and plant growth under drought and well-watered conditions -** *V. Angulo et al*
MSF54	**Mapping the spatial multifunctionality of soil-based ecosystem services relationships and bundles at European scale -** *J. Reyes Rojas et al*
MSF55	**Spatial distribution of the soil moisture along a terminal moraine using two experimental plots in a near-natural forest -** *A. Azekenova*
MSF56	**Taking advantage of digital soil mapping for sustainable territorial planning in Catalonia: a pioneering approach to preserve agricultural capacity -** *M. V. Ferrer et al*
MSF57	**Soil properties as reflected by long-term complex measures -** *V. Steponavičienė et al*
MSF58	**Indigenous Trichoderma (TRB)- a promising turfgrass growth stimulator and soil amendment -** *M. Zarafshar et al*
MSF59	**Can earthworms increase inorganic carbon sequestration in an artificial system?** *- T. Calogiuri et al*
MSF60	**Fertilising soils with silicate rocks and biochar can co-benefit soil CO_2 sequestration and crop productivity -** *E.E.M. te Pas et al*
MSF61	**Decrease in soil N_2O emissions from agricultural acid soils through enhanced silicate weathering practices: a study case of beans crop -** *S. Poblador et al*
MSF62	**Monitoring basalt enhanced weathering and C sequestration -** *A. Vienne et al*
MSF63	**Are C stocks linked to microbial necromass residues? Evidence from a 1km gradient in the tropical Andes -** *A. Martin Vivanco et al*
MSF64	**Assessing the potential of belowground carbon sequestration after converting a temperate permanent grassland into a bamboo (Phyllostachys) plantation -** *N. Kovacs et al*
MSF65	**Effect of nutrient-enriched biochar on soil properties and onion productivity -** *P. Bhatt et al.*

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MSF66	**Future-proof composts and soil amendments to cope with intensified droughts -** *L. Baert et al*
MSF67	**Soil-water land-use systems of the sandy soil landscapes: a quantitative study -** *L. Chaulagain et al*
MSF68	**Dissemination of multi-scale and multi-thematic soil data in Brittany region (France) -** *B. Lemercier et al*
MSF69	**Weighted Overlay analysis based agricultural land suitability assessment for soybean crop cultivation in Tehsil Jaranwala, Pakistan -** *N. Ahmad et al*

13:30 Masterclasses

MASTERCLASSES – Thursday, August 31				
	Theme 1: Soils for Society	*Theme 2: Advances in measuring and modelling soil processes*	*Theme 3: Mapping and evaluation of soil functions across scales*	*Theme 4: Soils for nature-based solutions*
	M23: Game-based learning for soil education: the Living Soil Workshop. *Aurora, B9110*	M27: New soil bulk density sensor in comparison with conventional measurement techniques *Aurora, B9010*	M30: Scientific Illustration in PowerPoint *Aurora, B9216*	M33: Agricultural practices for increasing soil quality *Aurora, B9260*
	M24: Reliable decision support systems for dealing with complex soil health issues *Aurora, B9111*	M28: Humic substances research – merits and controversies and future perspectives *Gaia, Gaia 1*	M31: Accessing WoSIS soil data using the GraphQL API *Aurora, B9218*	
		M29: NemaNINJA game: interpretation of nematode-based soil quality indicators. *Aurora, B9211*	M9: Designing a Soil Health system across a range of spatial scales *Aurora, B9259*	

16:30 Break and posters' removal

17:00 Perspectives on Soils
Aurora, ground floor

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19:00	**Travelling towards city center**
17:00 - 19:00	**Conference dinner** *Grote Kerk, Wageningen*

End of Day 3

DAY 4 - Friday 1st September

8:00	*Registration & poster placement, Aurora entrance*
	Soils for nature-based solutions Chair: Slava Vasenev (Wageningen University & Researchy) *Aurora, C9119+C9120*
8:30	**Keynote: Perspectives from Nature Based Solutions to monitor and restore soil and ecosystems** *Carlo Calfapietra (Institute of Research on Terrestrial Ecosystems)*
9:15	**Soil Health is Human Health: Implications for Restoration and Rewilding Initiatives** *Katherine Lawless*
9:30	**Climate change mitigation? Effects of enhanced silicate weathering on soil organic carbon dynamics** *Laura Steinwidder et al*
9:45	**Why we need reduced-complexity SOC models** *Kristine Karstens et al*
10:00	**Destisol: a decision support tool to evaluate ecosystem services provided by urban soils in order to improve urban planning** *Geoffroy Séré et al*
10:15	*Coffee break & poster placement, Aurora 1st floor*

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DAY 4 - Friday 1st September

	PARALLEL SESSIONS		
	Location: Aurora, room B9110 + B9111	*Location: Aurora, room B9210 + B9211*	*Location: Aurora, room B9216 + B9218*
	NBS for C sequestration Chair: Mathilde Hagens	**NBS for land development** Chair: Quirijn de Jong van Lier	**NBS to support soil ecosystem services** Chair: Slava Vasenev
10:45	**Climate smart agriculture: microbiological impacts of plant diversity to soil carbon sequestration** *R. Shrestha et al*	**Microbial diversity, function and soil fertility of corn and wheat agricultural soils in Mexico** *Jose Antonio Gutierrez et al*	**Assessment of ecosystem services and accounts for sustainable soil management: framework, methodology and case study** *Kuanting Lin et al*
11:00	**Water, carbon, and climate: an integrated modelling approach to Nature-Based Solutions** *B. Bogatinoska et al*	**Using plant-soil feedback to optimize crop rotations** *Zhaoqi Bin et al*	**Soil ecosystem services in Aravalli hills, Haryana, India** *Deepika Pandey*
11:15	**Wetlands in brook catchments: Modelling land-use change and its impact on soil organic carbon (2010 – 2020 – 2050)** *L. Timmer et al*	**SOILGUARD – Effects of land use and agricultural management along soil degradation gradients on nematodes, acari and collembola in European sites** *G. Bongiorno and R. de Goede*	**Environmental controls and effects of soil-disturbing vertebrates on soil and sediment flux** *P. Grigusova et al*
11:30	**Silicates rock! Silicates and biota as a Nature-based solution to mitigate climate change** *L. Boito et al*	**Dung beetle activity is soil type-dependent and modulates pasture growth and associated soil microbiome** *L. A. Weston et al*	**Soil health: a "golden thread" incentivising investment in Nature-based Solutions** *L. Phelan et al*

11:45	**Panel discussion "Bridging Science and Society"** Aurora, C9119+C9120
12:30	**LUNCH AND CLOSURE WSC2023** Aurora, ground floor
14:00 - 18:00	**Side event: Status of soil biodiversity assessments** Aurora, B9260

End of conference