

2nd ISMC Conference: New Perspectives on Soil Models



Monday - November 5, 2018 (Gaia Rm. 1 & 2)

- 8:00 Registration (Gaia Main Hall – Ground Floor)
- 8:30 Welcome (Gaia Rm. 1 & 2) - B. de Vos (ESG, WUR);
H. Vereecken (AI, Jülich);
M. van der Ploeg (SLM, WUR)

9:00-11:00 Modeling of soil ecosystem functions and services in landscapes (Gaia Rm. 1 & 2)

Convenors: Martine van der Ploeg, Kris van Looy, David Robinson

- 9:00 Why do we need models? – **B. Emmett**
- 9:20 Large-scale integration of soil erosion and organic carbon modelling: is it feasible? – **E. Lugato**
- 9:40 Soil modeling as an indispensable tool to realize inter- and transdisciplinarity – **J. Bouma**
- 9:52 Evaluating the ecosystem services linked to water in agricultural ecosystems: a contribution to the French national assessment of ecosystem services – **I. Cousin**
- 10:04 Soil ecosystem services appraisal and prioritization of soil remediation with a dynamic spatial modelling – **K. Van Looy**
- 10:16 Soil organic carbon stock changes predicted with Yasso model after afforestation of agricultural land in Finland– **B. Tupek**
- 10:28 Panel Discussion

11:00 Coffee break (Gaia Main Hall - Ground floor)

11:30-13:00 Linking Big Data to Smart Soil and Smart Environment (Gaia Rm. 1 & 2)

Convenors: Ana M. Tarquis, Ute Wollschläger, Teamrat Ghezzehei

- 11:30 SoilGrids: using big data solutions and machine learning algorithms for global soil mapping - **L.M. de Sousa**
- 11:50 Cross-database evaluation of machine-learning regression models for predicting soil water content at field capacity. - **S.E. Acevedo**
- 12:02 Spatiotemporal modelling of global SOC changes 1992-2015 at 300 m resolution - **T. Hengl**
- 12:14 Accounting for soil hardness to resculpt root system architecture - **C.K. Black**
- 12:26 Panel Discussion

13:00 Lunch (Gaia Plateau – 1st Floor)

- 14:00 Posters & Coffee (Gaia Main Hall - Ground floor)

15:30-17:30 Advances in soil-plant-atmosphere modelling and measurements across scales (Gaia Rm. 1 & 2)

Convenors: Anne Verhoef, Dani Or

- 15:30 Accounting for plant hydraulic properties in Earth system models (ESMs) – **J. Ogee**
- 15:50 Measuring water dynamics in the soil-plant-atmosphere continuum using radar - **S. Steele-Dunne**

- 16:10 Modelling soil hydric dynamic and soil nitrous oxide emissions under simulated rainfall in laboratory conditions at an intermediate scale of 10 m² x 0.3 m – **F. Poincot**
- 16:22 Spatial and temporal variability in water infiltration patterns – **L. van Schaik**
- 16:34 Connecting crop models with proximal soil sensing to improve agricultural management on field scale – **E. Wallor**
- 16:46 Listening to earthworms burrowing and roots growing - acoustic signatures of soil biological activity – **M. Lacoste**
- 16:58 Panel Discussion

17:30 Executive Board Meeting (Lumen 4 VC Zaal (C.215))

17:30 Reception (Gaia Main Hall - Ground floor)

17:30 Tour World Soil's Museum (Gaia Bldg.)

Tuesday - November 6, 2018

8:30 - 10:30 Soil modelling for the next generation of Earth System Models

(Gaia Rm. 1 & 2)

Convenors: Harry Vereecken, Peter Finke

- 8:30 Introducing soil structure in land-surface models: implications for water and energy fluxes – **S. Fatichi**
- 8:50 Coupled soilscape-landform evolution: Recent insights – **G. Willgoose**
- 9:10 Scale-dependent parameterization of aquifer conductance to simulate groundwater - surface water interactions in regional hydrogeological models – **A. Di Ciacca**
- 9:22 On the static representation of soil in regional and global climate models – **A. Nemes**
- 9:34 Functional Sensitivity Study of Pedotransfer Functions for use in Land Surface Models - **L. Weihermüller**
- 9:46 Concepts and complications for implementing hydrologic processes in soil and landscape evolution models – **M. van der Meij**
- 9:58 Panel Discussion

10:30 Coffee break (Gaia Main Hall - Ground floor)

11:00–12:30 Permafrost, peat and frozen soils (Gaia Rm. 1 & 2)

Convenors: Umakant Mishra, Eugenie Euskirchen, Bertrand Guenet

- 11:00 Evolution of Permafrost in Alaska in 20th and 21st Centuries – **V. Romanovsky**
- 11:20 The influence of river migration on the storage and cycling of soil organic carbon in permafrost affected floodplains – **J. Rowland**
- 11:40 Modelling northern peatlands methane emissions for studying interactions between permafrost, peat soil carbon and atmosphere and feedbacks on climate – **E. Salmon**
- 11:52 The Canadian Model for Peatlands (CaMP): a national-scale peatland carbon accounting model – **C. Shaw**
- 12:04 Panel Discussion

12:30 Lunch (Gaia Plateau – 1st Floor)

- 13:30 Group Picture (Gaia Main Hall- Ground floor)

- 14:00 Strategic and future perspectives for ISMC (public; Gaia Rm. 1 & 2)
- 15:00 Excursion (visit Earth ecosystems – Burgers’ Zoo)
- 18:00 Conference Dinner + Awards (Burgers’ Zoo)
- 20:00 Travel back to Wageningen

Wednesday - November 7, 2018

8:30-10:00 New Perspectives on the Modeling of Colloidal

Particle Fate in Soils (Gaia Rm. 1 & 2)

Convenors: Eric Michel, Scott Bradford

- 8:30 Upscaling remobilization using exposure-time – **T. Ginn**
- 8:50 Soil in catchment-scale models of water quality as affected by micropollutants and emerging contaminants - **Y. Pachepsky**
- 9:10 Modelling colloid-facilitated transport and geochemical effects on colloid transport – **D. Jacques**
- 9:22 Flow Interruption Facilitates Iron Oxide Colloid Retention Under Unfavorable DLVO Attachment Conditions - **J.F. Carstens**
- 9:34 Co-transport of nanoparticles and contaminants in groundwater: a coupled reactive transport model – **T. Tosco**
- 9:46 Panel Discussion

10:00 Coffee break (Gaia Main Hall- Ground floor)

10:30-12:30 Soil organic carbon dynamics modeling (Gaia Rm. 1 & 2)

Convenors: Michael Young, Alejandro Flores, Katherine Todd-Brown

- 10:30 The efficacy of soil carbon modeling: what types of information and data are needed to capture the dynamics, status, and fate of soil organic carbon? - **M. Williams**
- 10:50 Soil process modelling - from empirical description to emergent behavior - **M. Reichstein**
- 11:10 A conceptual framework for long-term, landscape-scale SOM models incorporating vegetative and mineral-matrix zones of influence - **C. Cagnarini**
- 11:22 SOM-aggregate dynamics in the plant-microbe-soil interaction model – **N. Vasilyeva**
- 11:34 Advances in National Scale Upland Forest Soil Carbon Modelling with the CBM-CFS3 – **C. Shaw**
- 11:46 A modelling approach for quantifying stable organic matter related to the soil biota activity – **O. Chertov**
- 11:58 Unifying soil organic matter formation and persistence frameworks into a mathematical model: MEMS v1.0 - **F.M. Cotrufo**
- 12:10 Panel Discussion

12:30 Lunch (Gaia Plateau – 1st Floor)

- 13:30 Posters (Gaia Main Hall- Ground floor)

15:00 Wrap-up, Closing (Gaia Rm. 1 & 2)

Practical information

1. Posters will be on display for the entire conference duration. They can be placed as early as the registration on Monday, Nov 5th
2. Presenters are kindly asked to give the ppt. files to the conference assistants inside the session venue at least 10 minutes before the start of each session. Presenters for session 1 (Modeling of soil ecosystem functions and services in landscapes) are kindly asked to hand in their presentations soon after registration.
3. A bus has been arranged to bring participants staying in Fletchers Hotel and WICC Hotel to the conference venue every morning. The bus to the conference leaves Fletcher Hotel at 7:30am and WICC Hotel at 7:45am.
4. Transport back to town / hotel in the evening is not arranged. Participants can take the bus 88 or 84 back to Wageningen center. The nearest bus station to Gaia Bldg. is Wageningen Campus/Atlas.



5. For the excursion on Tue (Nov 6th), transportation to Burgers' Zoo and back to Wageningen is arranged.
6. A quiet working space within the conference venue (Lumen 1) is available at the following moments:
Nov 5th: 13.30-17.00
Nov 6th: 13.30-15.00
Nov 7th: 9.00-11.30