

ESF/BSSS/SEERAD-funded soil modelling meeting at the University of Aberdeen, 10-13 April 2005 - Final programme

10/04/05 Sunday – Excursion and Icebreaker

12:00 – 18:00 Excursion “Soils in Scotland” guided by Tom Batey

18:00 – 22:00 Icebreaker in Aboyne (<http://www.visitscotland.com/library/aboyne>)

11/04/05 Monday – Soil processes at different scales

Session 9:00 – 12:10 Micro Scale Processes

Keynote lecture: Francesca Cotrufo: “Understanding and quantifying soil Carbon dynamics: when experiments meet models” - 45 min

- Liz Baggs : “A 13C approach for determining CH₄ oxidation rates in soils” - 15 min
- Wu Lianhai: “SPACSYS: A Simulation Model of C,N and water cycling in plant-soil-microbe systems with 3D root architecture” - 15 min

10:30 -11:00 coffee break and poster viewing

- Blagodatsky S. A.: “Modelling of soil microbial biomass turnover: a key for understanding soil organic carbon budget and predicting greenhouse gas emissions” - 25 min
- Massheder Jon: “A hybrid part-mechanistic, part-empirical model of N₂O emissions from fertilised soils” - 15 min
- Zhiyanski Miglena: “Quality of soil humus in ecosystems from Rila Mountain – Bulgaria” - 15 min

12:10 – 13:00 Lunch break

Session 13.00 – 18:30 Macro Scale Processes

Keynote lecture: Markus Reichstein: “Modelling soil carbon fluxes at local to continental scale using data- and process-oriented approaches: strategies, pitfalls and uncertainties” - 45 min

- Lilly Allan: “National Scale Modelling of nitrous oxide emissions: the role of soils and land use” - 15 min
- Lewis Doug R: “Modelling farm pollutant transport processes associated with livestock farming” - 15 min

14:30 -14:45 coffee break

- Post Joachim: “Impact of agricultural management on soil carbon stocks and attached uncertainty at the river basin scale” - 15 min
- Ragab Ragab: “Accounting for the impact of possible future Climate and Land Use changes on water flows from the Surface to the Sea: The New Integrated Hydrological modelling System approach” - 25 min
- Lark Murray: “The effect of spatial scale when modelling soil processes: approaches based on geostatistics and wavelet analysis” - 25 min
- Schrumpf Marion: “Detecting changes of soil carbon stocks to improve the European carbon balance” - 15 min

16:15 -16:30 coffee break

- Trettin C: “Uncertainties in measurement and scaling of soil C processes and pools in wetland forests and peatlands” – 15 min
- V.A. Romanenkov: “Modelling the interactive impact of practices that promote C gain by arable soils in the European Russia” – 15 min
- Van Oost Kristof “Landscape-scale modelling of carbon cycling under the impact of soil redistribution” – 15 min
- Shurpali N.J.”Assessing uncertainties in Finnish national greenhouse gas inventory of soil emissions due to peat land use” - 15 min
- Rowe Ed: “Effects of changes in grazing on the Welsh carbon budget” – 15 min
- Flynn Helen C.: “Modelling present and future nitrous oxide emissions from fertiliser applications to Scottish agricultural soils” – 15 min

19:00 dinner in Crombie Hall

12/04/05 Tuesday – Modelling of Soil Organic Carbon

Session: 8:30 – 13:00 SOC Models of different scales

Keynote lecture: Keith Paustian: “Uncertainty assessment of models using long-term field experiments, scope for modeling 'measurable' pools and scaling issues” - 45 min

- Foereid Bente: “Modelling carbon sequestration using CENTURY” - 15 min
- Sakrabani Ruben: “Prediction of Changes in Soil Organic Carbon with Climate Using CENTURY 5” - 15 min
- Heinemeyer Andreas: “The holy Grail: Getting the carbon budget right - analysis performance comparison of site specific modelling of soil organic matter in UK peaty soils using models with increasing abiotic and biotic complexity (ROTH C, CENTURY, Forest-DNDC and MEFYQUE)” - 25 min
- Franko Uwe: “A simplified model for the simulation of soil organic matter turnover for mean annual conditions” - 15 min

10:45 -11:00 coffee break

Keynote lecture: Changsheng Li: "Modelling carbon sequestration and trace gas emissions from agroecosystems" - 45 min

- Komarov A.: “Uncertainties in initialization of soil organic matter pools and robustness of coefficients in soil dynamic models: model ROMUL as an example” - 25 min
- Kuka Katrin: “Modelling the impact of pore space distribution on carbon sequestration” - 15 min
- Chertov Oleg: “Modelling SOC dynamics in forest soils: some results and a problem of uncertainty of initial data” - 15 min

13:00 - 14:00 lunch break

Continued Session: 14:00 – 15:30 SOC Models of different scales

- McGechan Malcom: “Modelling fertility and N₂O emissions in ley-arable rotations” - 15 min
- Tipping E. “Modelling carbon dynamics in forest soils with emphasis on DOC” - 25 min
- Yurova Alla: “What does determine the soil organic layer depth in a boreal forest? Modelling carbon storage under two contrasting soil moisture conditions” - 15 min
- Verbeeck Hans : “Uncertainty and parameter sensitivity of the forest carbon flux model FORUG: a Monte Carlo analysis” - 15 min

15:30 -16:30 coffee break and poster session

Workshop: 16:30 – 18:30 SOC model uncertainty

19:00 Dinner

20:15 Whisky tasting

13/04/05 Wednesday – Results of the Workshop and final discussion

Workshop: 9:00 – 12:30 SOC model uncertainty

12:30 – 13:30 lunch

Session: 13:30 – 16:30 Final discussion

List of posters:

- Austin Laura M.C: "Modelling ¹³C stable isotopes pulses in equilibrium soil food webs"
- Berntsen Joergen: "Simulating trends in crop yield and soil carbon in a long-term experiment - effects of rising CO₂, N deposition and improved cultivation"
- Chiti Tommaso: "Understanding the heterotrophic flux of the soil by studying the labile fractions of SOM"
- Juerg Fuhrer: "The temperature response of CO₂ production from bulk soils and soil fractions is related to soil organic matter quality"
- King John: "SNSCAL: A soil nitrogen supply calculator based on summarising concepts"
- Pacholski Andreas: "Balancing of soil CO₂-efflux from sugar beet under elevated atmospheric CO₂ - comparison of continuous static chamber measurements and modelling results"
- Peltoniemi Mikko "The key factors affecting uncertainties of sink and stocks of carbon in forests"
- Gottschalk Pia "Application of a method to assess model uncertainty and sensitivity - comparison of a pasture and ecosystem model in regard to NEE prediction"
- Ragab Ragab: "The Integrated water Management approach for water saving: the SALTMED model application"
- Standing Dominic: "Rhizosphere nutrient status quantified with microbial biosensors"
- Szanser Meciej: "Effects of epigeic macro arthropods on litter decomposition - carbon balance in the field mesocosm experiment"
- Tipping E.: "Modelling long-term (1500-2500) changes in acidification status and heavy metals in upland UK catchments"
- Zimmermann Michael "Can model-suitable SOC pools be predicted by DRIFT-spectroscopy?"
- Kurganova Irina : "Modelling of annual carbon dioxide flux from soils"
- Marthews Toby: "Soil Water, Energy, and Transpiration (SWEAT) - A model for simulating soil variables from climate data"
- Kumar Suresh: "Calibration of a Soil Respiration System"
- Fred Hattermann: "Integration of wetlands and riparian zones in regional hydrological modelling"
- Mike Haft: "Comparison of the IPCC default method for assessing SOC stocks in arable soils with process-based SOM models using SOMNET long-term datasets"