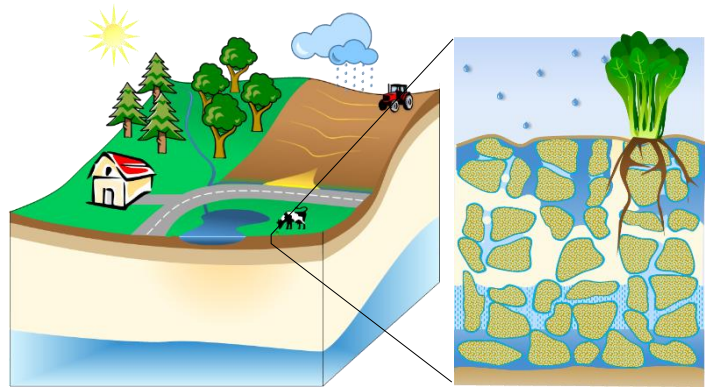


Workshop “New Developments in Soil / Plant modelling”

The Commission IV "Soil Fertility and Plant Nutrition" offers a workshop on Soil / Plant Modelling on 20/21.05.2019 at ZALF, Müncheberg.

Sustainable use of soils aims to maintain or increase soil fertility. Soil fertility refers to many functions of the soil, of which the stable production of



food is only one. Mathematical modelling of soils incorporates different approaches to represent the complex interaction of processes, including the plants and other organisms that grow and dwell in it. Mathematical models i) help to analyse the interactions between the processes and thus improve our knowledge and ii) enable the prediction of hypothetical states of soil-plant systems under changing boundary conditions. The workshop aims to bring together modellers from different sub-disciplines (soil physics, soil chemistry, soil biology, agronomy, plant physiology a.o.) to jointly discuss new developments in the sub-disciplines in the context of soil-plant interaction and to work out possible consequences for other disciplines. In addition, we want to trigger a discussion on scales and uncertainties of simulation and the consequences for the system representation. The discussion aims at solving the question of how to integrate different scales in a simulation (soil microbial dynamics or soil structure vs. world food supply, as an extreme). Is there evidence of small-scale processes that print through at larger scales? How do we currently deal with this and how should we?

The idea of the workshop is to offer a forum to all interested persons, especially young scientists, to reflect on current disciplinary and interdisciplinary developments, bring in own ideas into the discussion and to identify the current open research questions.

Agenda

Mo. 20.05.2019

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| 13:00-13:05 | Welcome (Florian Stange/Claas Nendel) |
| 13:05-13:50 | Short self-introduction of participants |
| 13:50-14:00 | Workshop aims (Claas Nendel) |
| 14:00-15:00 | Impulse talk Prof Keith Paustian , Colorado State University: Supporting climate change mitigation: The role of dynamic process-based models in quantifying soil carbon and greenhouse gas emissions |
| 15:00-15:30 | Discussion |
| 15:30-16:00 | Coffee/Tea – Poster viewing |
| 16:00-17:00 | Impulse talk Prof Doris Vetterlein , Martin Luther University Halle-Wittenberg: Relevance of rhizosphere processes at the soil profile scale - can models help to upscale small scale process knowledge? |
| 17:00-17:30 | Discussion |
| 17:30-18:15 | Break-out groups “New developments” |

Tue. 21.05.2019

09:00-09:15	Charge for the day
09:15-09:40	Report from break-out and identification of topics
09:40-10:30	Break-out groups "Scales of application"
10:30-11:00	Coffee/Tea – Poster viewing
11:00-11:20	Report back from break-out groups
11:20-12:20	Concluding discussion
12:20-12.45	Next steps
12:45-13:00	Farewell