The International Soil Modelling Consortium, ISMC



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Motivation

The field of soil process modelling is fragmented and dispersed. There is a lack of coordination and exchange between the different soil disciplines. An improved "position" and visibility of soil research and modelling in the Earth Sciences Community is needed. It is also necessary to reach out to other modelling communities in the field of terrestrial systems, climate systems, ecology, engineering, etc. The scientific community lacks easy-to-access and available standardized and high quality data and protocols for the development, calibration and validation of models.

Objectives and ongoing activities

The main objective of the consortium is to bring together soil modelers, to promote and advance soil modelling, to improve interactions with modelling activities in other geoscience disciplines and to establish a modelling and data platform.

1. ISMC-Website https://soil-modeling.org/

- Model collection
- Database
- Message board and forum





2. Bringing together different soil disciplines and experts



3. Addressing major scientific gaps: open questionnaire on the ISMC website

- Which processes should deserve more attention or be better described in soil models?
- How to better integrate soil modelling expertise and knowledge within different soil disciplines?
- What are promising new measurement techniques that may contribute to improve modelling of soil processes?
- How can the establishment of an international soil modelling consortium support in solving those questions?

performance based on standardized and harmonized data sets, 4) identifying interactions with other network platforms related its common data formats, protocal and oncologies, 5) developing new approaches to inverse modelling, califoration, and validation of nondeis, 6) integrating and imadeling expertises and state of the art knowledge on soil processes indirect, ends surface, consider, organized, and and oncologies, 5) developing expertises and state of the art knowledge on soil processes indirect, ends surface, consideration, and validation of 2) integr process modes with new observation, measurement and data evaluation technologies for mapping and characterizeng soil properties across scales. Our consistent will be not the integrating these alms, the consortium modelers and experimental soil operations at the forefront of new technologies and approaches to characterize soils. By addressing these alms, the consortium modeling and the rise of soil modeling as a knowledge diacemination instrument in addressing key global issues and stimulate the development of translational meanth activities. This presentation will provide a competing case for this much-needed effort, with a focus on tangible benefits to the scentrific and food security communities.



Disciplines in the ISMC

support in solving these questions?

– What are the challenges and needs in upscaling soil processes?

4. White paper on the challenges and perspectives in soil modelling

Under revision in Vadose Zone Journal



First Meeting at EGU 2014

5. Development of a model and data platform

- Model intercomparison
- Establishing benchmark datasets
- Standardization and harmonization of data



6. Connection of knowledge across the scales



Model components are coupled via an external coupler to form a model solution for a specific problem

Further steps

- Develop a governance structure
- Connect to other organisations (IUSS, WCRP, GEWEX, FAO, AgMIP, ...)
- Establish a model and data sharing platform

Join the Austin International Conference on Soil Modeling (https://soil-modeling.org/austin-workshop)

- Opportunity for scientific exchange about soil modelling in different disciplines
- Involve in scientific discussions in world-café style
- Participate in the foundation of the Internationsl Soil Modelling Consortium
- Become a member!

