



1. Title

Modelling of Soil Properties and Processes – Challenges and Opportunities

2. Type

Divisional Symposium

3. Organizer(s) & Convener

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4. Rationale

In the past, soil science to a large extent was based on inventory, classification and applied research with specific focus of soils role for food and fibre production. Today the questions asked from soil scientists by politics and society require solutions based on quantitative projections of the genesis of soils, its properties and functions and genesis in time and space under the conditions of global change. The quantitative understanding of the interactions of biological, chemical and physical processes as well as their (up-)scaling to larger scales and finally to the management scale has to be seen one of the fundamental challenges of today's soil research.

5. Objectives

The objective of the symposium is to review the recent developments and advanced methods of modeling soil properties and processes on and across all temporal and spatial scales. Special emphasis should be on the integration of complementary data and information on biological, chemical and physical properties and functions obtained at particular scales, and on quantitative methods that allow bridging and linking scales by effective models, one of the outstanding challenges in soil science.





6. Description

In the past, soil science to a large extent was based on inventory, classification and applied research with specific focus of soils role for food and fibre production. Today the questions asked from soil scientists by politics and society require solutions based on quantitative projections of the genesis of soils, its properties and functions in time and space under the conditions of global change. Up-scaling of soil processes to understand and describe the impact on ecosystem functions is an important field of today's soil research. The present symposium will focus on the challenged and frontiers to be attacked, the modeling techniques and their opportunities, advantages and limitations. Papers will be welcome covering soil chemistry, physics and biology and a wide range of temporal and spatial scales – from the molecular scale to the landscape scale. Contributions focusing on bridging temporal and/or spatial scales will be most welcome.

