



Session Proposal

1. Session Title (*Limited to 30 words total*)

Water Flow and Solute Transport in the Soil-Plant System

2. Session Organizers (*List the names, affiliations, and contact details of the session organizers. Indicate the primary contact person.*)

Daniela Reineke, Soil Science Section, University of Kassel, Germany,
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3. Session Description (*A brief description that outlines the scope and relevance of the session*)

Description (*limited to 300 words total*):

Water in the unsaturated zone is involved in many ecosystem processes such as plant transpiration, transport of nutrients, and regulation of temperature by evaporative cooling and heat storage. Water is also a transport agent for various contaminants in the soil, such as dissolved pesticides or drug residues, nanoparticles, or pathogens. Knowledge of the movement of water and solutes in the soil-plant system can therefore help predict a variety of environmental outcomes, such as groundwater contamination and drought stress in plants.

This session invites contributions dealing with the complex interactions that govern



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water flow and solute transport in the soil-plant system. We welcome both experimental studies as well as modeling studies carried out at a range of scales from the laboratory sample scale to the catchment scale that advance our understanding of the movement of water and solutes through the unsaturated zone or use soil hydrologic principles to solve practical problems in applied fields such as irrigation, groundwater quality, and soil remediation.

We particularly welcome contributions related to:

- The quantification of the components of the soil water balance, such as evapotranspiration, deep drainage, and soil water storage
- In-situ and laboratory measurements of soil and plant hydraulic properties
- The temporal and spatial dynamics of root water and nutrient uptake
- The interaction between irrigation and soil hydrology and assessment of irrigation systems
- Remote sensing of soil moisture and evapotranspiration
- Transport of solutes, particles, and pathogens through the unsaturated zone
- Nitrate leaching to the groundwater
- Modeling of water flow and solute transport in the soil-water-atmosphere continuum

4. Format (*Indicate whether the session will feature oral presentations, panel discussions, workshops, or any other interactive format*)

Oral presentations



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5. Proposed Speakers (*List potential speakers (if any) you intend to invite, including their affiliations and a brief description of their contributions to the session*)