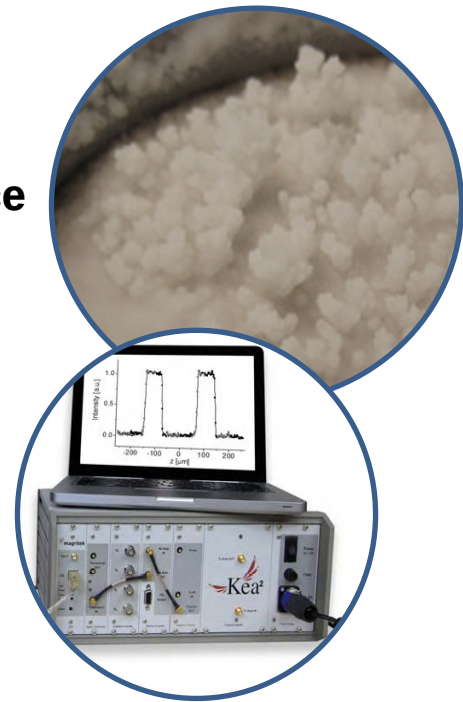




MSc. Thesis

Monitoring the effect of salt crusts on evaporation using nuclear magnetic resonance

The topsoil is a critical transition zone between soil and atmosphere, where important processes like infiltration and evaporation take place that control the water balance in the soil-(plant)-atmosphere continuum. For evaporation from saline soils, the formation of salt crusts is known to have a considerable effect on the evaporation rate. Since salt crusts are relatively thin (up to a few cm only), the investigation of water content profiles across this layer requires a non-invasive monitoring technique with high resolution, as is provided by single-sided nuclear magnetic resonance (NMR) measurements.



Tasks:

- Perform laboratory experiments to determine evaporation and topsoil moisture dynamics from saline soil samples with salt crusts using NMR
- Data analysis using Matlab or Python

General Information:

- Advisors: Dr. Andreas Pohlmeier and Prof. Sander Huisman
- Thesis within the excellent SFB1313 team
- Willingness to work at Forschungszentrum Jülich (www.fz-juelich.de) located between Aachen and Köln
- Financial support through student-assistant position available

Apply now:



Prof. Dr. J.A. (Sander) Huisman
Universität Stuttgart
Institute for Modelling Hydraulic and Environmental Systems
Dept. of Hydrology und Geohydrology
Tel.: 02461-618607
Email: sander.huisman@iws.uni-stuttgart.de