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**Institute for Modelling
Hydraulic and Environmental
Systems (IWS)**

VEGAS - Research Facility for
Subsurface Remediation

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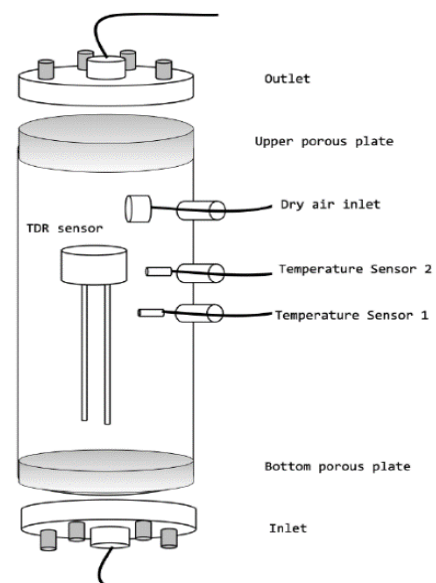
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**M.Sc. Topic "Calibration of a TDR probe for measuring soil
moisture at a temperature range from 20°C to 100°C in
different porous media"**

Soil moisture plays an important role in many areas, such as agriculture, efficient irrigation, thermal remediation or geothermal energy. Therefore, accurate measurements of soil moisture are necessary. Since taking soil samples is a disruption to the system, a way to measure soil moisture directly on site is required. With the help of time domain reflectometry probes (TDR probes), soil moisture can be measured in the soil.

TDR probes obtain accurate data at an ambient temperature and in "standard" soils, such as sand. However, in thermal remediation or geothermal applications, regular soil temperatures are far exceeded. In addition, a variety of different soils are found in the field.

For this, TDR probes should be calibrated for different temperatures, soil moistures and soil types at VEGAS. The probes will be used to monitor soil moisture during a thermal PFAS remediation experiment. The experimental stand has been built up during a previous master thesis and should now be optimized and used for further experiments.



Design des Versuchstands





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Your tasks will include:

- Literature research and familiarizing yourself with the subject of TDR
- Optimization of the experimental stand and execution of the experiment
- Evaluation of the data and creation of the calibration curves

Desired skills:

- Basic knowledge of python or the motivation to get acquainted with it

If you are interested, please contact Anna Burkhardt (anna.burkhardt@iws.uni-stuttgart.de).

The thesis can be written in German or English.

