



## SUPER – Stuttgart University Program for Experiencing Research Project Information

### Institute's Information

Name of Institute Research Facility for Subsurface Remediation (VEGAS), University of Stuttgart

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### Duration of Project/Number of Students

June/July x

June/July/August x

Number of Students 1

**Name of Project** heat transport in the subsurface  
geophysics-based (TDR) measurements of soil moisture in non-isothermal  
conditions

**Beneficial Skills  
& Knowledge** Experimental/practical work in our test facility  
mathematical/numerical modelling could be explored if this is of interest

### Description of Work

Heat transport in the subsurface plays an important role for thermal (in-situ) remediation, seasonal heat storage in the subsurface to reduce our CO<sub>2</sub> footprint, and urban planning (e.g., heat island effect). Due to the relatively large specific heat capacity of water, measuring the moisture content at temperatures larger than ambient conditions is important. Geophysical tools like TDR work well for this purpose under ambient conditions and well-draining soils.

The goal of this SUPER-project is to setup and a test stand for TDR measurements in porous media using various porous media under non-isothermal conditions. Our team, consisting of a PhD student and our technician will assist you. Numerical modelling of heat transport in the subsurface, on various scales, is an option.

