Professorship of Environmental Sensing and Modeling
TUM School of Computation, Information and Technology
Technical University of Munich

Master thesis in environmental sensing

Urban biogenic flux observations in Munich

As cities take the lead in mitigating climate change and striving to reduce CO2 emissions, it becomes increasingly crucial to monitor the carbon dioxide (CO2) emissions of urban areas. One important component is to monitor the urban vegetation carbon flux. Therefore, the field measurements on plants and soils are required to quantify the biogenic CO2 fluxes.

Your task includes sensor installation for continuous monitoring of some variables and repetitive manual measurements with portable instruments in several locations pre-determined in the Munich urban area.

This topic is part of the ICOS Cities PAUL (Pilot Applications in Urban Landscapes) project, the measuring instruments and observation plan are already prepared, and you will be supervised simultaneously by the supervisors from University of Basel, Karlsruhe Institute of Technology, and Technical University of Munich.

The work includes:

1. Installing and routinely maintaining sensors for long-term biological activity monitoring at different sites in Munich.
2. Conducting systematic observational studies of various vegetative indices at multiple locations utilizing portable instruments.
3. Gathering and analyzing the collected data, followed by a comparative assessment against the established biogenic carbon dioxide flux model results.

Experiences with field measurements or plant-soil behavior are beneficial. Upon successful completion of the project the results might result in a publication. Supervision of the thesis can be in English or Chinese.

If you are interested or for any questions, please contact:
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