

Position associated to Master thesis on Semiarid evapotranspiration modeling



Background for the project: Limited water resources and growing needs of urban as well as agricultural water requirements in semi-arid sites require quantification of evapotranspiration with novel solutions. Most of the evapotranspiration models in semi-arid regions are very sensitive to the boundary conditions due to unexpected biophysical and ecohydrological changes.

Objective: Extensively test and modify a physically-based evapotranspiration modelling framework (STIC: Surface Temperature Initiated Closure) in the semi-arid landscapes of Australia, North America and Africa. Creating a global product from satellite data.

Tasks:

- combining thermal remote sensing with Penman-Monteith and Shuttleworth-Wallace model to constrain the stomatal and aerodynamic conductances,
- testing and validating the modified STIC scheme using both tower as well as satellite-based land surface temperature, radiative and meteorological forcings, and
- developing uncertainty framework in evapotranspiration estimates due to land surface temperature uncertainties.

Project type Paid MCs Thesis Project, location in Luxembourg

Department of supervisors

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[See the job announcement here](#)

