

**Postdoctoral Researcher: Ecosystem Services in Urban Landscapes
Future Cities Laboratory, Singapore-ETH Centre**

The 'Ecosystem services in urban landscapes' (ESS) research project (<http://www.fcl.ethz.ch/module/ecosystem-services-in-urban-landscapes/>), aims to find ways of incorporating knowledge about tropical urban ecosystem services into design, both at a local scale and across larger city landscapes.

The project is highly inter-disciplinary, with a combination of scientists with backgrounds in plant ecology, landscape ecology, hydrology, and landscape architecture and from multiple countries. The ecohydrology/hydrometeorology module of the project aims to quantify the role of individual plants and land use types in providing benefits at different spatial scales. In particular, it will focus on the role that vegetation plays in mitigating the urban heat island effect and the partition between infiltration and runoff.

This will be achieved by investigating how the amount, type and spatial arrangement of urban vegetated areas, including an explicit treatment of vegetation characteristics (e.g., plant traits), affect the local microclimate and the partition between evapotranspiration and runoff, with a special emphasis in understanding the potential for re-ducing urban heat island effects and increasing soil water storage during storms. Most of the work will be conducted in Singapore, but the tools developed will be applicable over a much wider area of tropical South-East Asia.

We are looking for a candidate who will be responsible for completing the scientific tasks of the ecohydrology/hydrometeorology module within the EES project and who will interface with the other project partners and assist the work of a PhD student appointed in the same module.

Excellent organisational and oral/written communication skills are therefore required. An excellent command of English is essential. Experience in project management and team leadership is an asset. The candidate should have a PhD degree preferably in the field of Hydrometeorology, Ecohydrology, Hydrology, Atmospheric Sciences or a related discipline that includes specific and broad knowledge in the area of meteorology and hydrology with focus on soil-vegetation-atmosphere transfer.

Candidates with an interdisciplinary background are particularly welcome, but knowledge of planetary boundary layer modelling, meteorological and hydrological modelling is considered an important asset. Previous experience with similar research in urban environments and in urban heat island issues represents an additional asset. Knowledge of numerical weather models such as WRF, COSMO, OLAM, and/or experience with large-eddy simulations (LES) is evaluated very positively. Quantitative and modelling skills, including programming skills, are a pre-requisite for the position. Theoretical and modelling work in this respect is expected to be the main focus of the position.

Key Skills

The candidate should

- have a PhD degree in Hydrometeorology, Ecohydrology, Hydrology, Atmospheric Sciences or a related discipline, or with equivalent relevant background.
- have experience in the field of the area of meteorology and hydrology with focus on soil-vegetation-atmosphere transfer.
- have knowledge of planetary boundary layer modelling, meteorological and hydrological modelling is considered an important asset.
- Quantitative and modelling skills, including programming skills, are a pre-requisite for the position.

Work location: 1 Create Way, CREATE Tower, Singapore 138602 (NUS University Town)

Duration: Full-time position, 2 years

To apply, please contact Dan Richards at richards@arch.ethz.ch

The Singapore-ETH-Centre is an equal opportunity and family-friendly employer. All candidates will be evaluated on their merits and qualifications, without regards to gender, race, age or religion.

About Singapore-ETH Centre

The Singapore-ETH Centre was established as a joint initiative between ETH Zurich – the Swiss Federal Institute of Technology in Zurich and Singapore’s National Research Foundation (NRF), as part of the NRF’s CREATE campus. The centre serves as an intellectual hub for research, scholarship, entrepreneurship, postgraduate and postdoctoral training.

The centre currently runs two research programmes, the [Future Cities Laboratory \(FCL\)](#), followed by [Future Resilient Systems \(FRS\)](#). It is home to a community of over 100 PhD, postdoctoral and professorial researchers working on diverse themes related to sustainable cities and resilient infrastructure systems. In the course of our work, researchers actively collaborate with universities, research institutes, industry, and government agencies with the aim of offering practical solutions.