PhD Position in 3D Thermal Remote Sensing

The University of Zurich (UZH) Remote Sensing Laboratories (RSL) jointly with Eawag aquatic research are established research institutions with a strong focus on all aspects of remote sensing.

TRISHNA (Thermal infrared Imaging Satellite for High-resolution Natural resource Assessment) is a future high-resolution space-time mission in the thermal infrared (TIR) led jointly by the French (CNES) and Indian (ISRO) space agencies for a launch planned in 2025. The scientific objectives of the mission are monitoring of the water status and stress of continental ecosystems, monitoring of coastal and inland waters, the urban environment, and applications to solid Earth, the cryosphere and the atmosphere.

UZH/Eawag will contribute to the TRISHNA mission through the European Space Agency (ESA) PRODEX scheme. The project will contribute to the improvement of the physical understanding of energy-matter interactions using TRISHNA simulations and measurements. In particular, thermal anisotropy models and measurements will be employed to advance the understanding of directionality, anisotropy and albedo in rugged terrain. Aquatic and terrestrial reference test sites will be used for calibration and validation of TRISHNA data. Synergy with other missions by including their products and/or validation schemes is achieved by comparative analysis.

In this framework, we are seeking to expand our team and invite applications for a PhD position in 3D thermal remote sensing with a focus on terrestrial ecosystems. You will collect field data in several sites to model 3D virtual scenes with the DART radiative transfer model. Resulting scenes are used to simulate thermal directional radiation under different environmental conditions. You will combine multi-angular measurements and simulations to gain understanding on the 3D surface energy balance and to refine and validate TRISHNA products.

You will be based in Zurich and embedded in a supervisory team including Kathrin Naegeli, Alexander Damm, Gabriela Schaepman-Strub, Daniel Odermatt, and Michael Schaepman. You will work at the Department of Geography (UZH), which host several research groups working on a variety of topics related to remote sensing.

To apply, you must have a completed master’s degree in either physics, environmental science, remote sensing, or a closely related science field. You must be willing to work with scripting languages, models, and simulations. Experience in performing field work is an asset. You are expected to work in a team and with large, international consortia. A high standard of written and spoken English is mandatory. The ability to speak French is an asset. The position starts as soon as a suitable candidate is found. Salaries correspond to the UZH regulations of PhD salaries.

We are looking for a highly motivated, enthusiastic and independent person with a passion for fundamental science, experiments and field work to join our team. We offer outstanding working conditions, a high quality of life in Zurich, and an excellent support environment.

Please send your complete application (composed of a motivation letter, complete CV, and names of 2 references) to sandra.altorfer@geo.uzh.ch. Selection of candidates will begin 15 July 2021. Preferred starting date in Zurich is 1 October 2021 or upon agreement. For further questions, please contact alexander.damm@geo.uzh.ch or kathrin.naegeli@giub.unibe.ch.