



Position available: *Research Assistant or Postdoc*

3D/4D modeling of South Pacific Islands (Moorea IDEA Avatar)

An environmental modeling project for the South Pacific Islands Moorea and Tetiaroa is underway, dealing with circulation models, biological connectivity, ecological networks and social dynamics. For this certain base data is needed, which describes the physical state of the island and into which all kind of information can be imbedded. Ideally this would be a spatial information system, to be used as database for administration, analysis and representation of the data. Important base data is a 3D landscape model, whose essential components are a Digital Terrain Model, buildings, roads, and vegetation. Such models have already been created from high-resolution satellite stereo images and Lidar flight data. In a second step the landscape model will be combined with a bathymetric model, including the reef and lagoon topography (mooreaidea.ethz.ch). The generation of the bathymetric model is currently our focus. For this purpose we use aerial Lidar data, UAV images and underwater photogrammetry.

Requirements: The successful candidate has a Master or PhD degree in Geomatics or a neighboring discipline. He/she is familiar with digital photogrammetric measurements and modeling (geometry and texture), as well as with Lidar point cloud processing. This expertise includes mathematical modelling, statistical analysis and broad programming skills. He/she is prepared and capable to work in a highly interdisciplinary and international group of scientists and is able to perform the work largely autonomously.

Tasks: 3D model generation from images and point clouds, underwater photogrammetry, image classification for habitat mapping (applying deep learning), webpage maintenance

Work Place: ETH Zurich, Institute of Theoretical Physics, Platform for Advanced Scientific Computing

Salary: According to ETH Zurich rules, commensurate with experience (from CHF 75K to 91K)

Start of Work: 1 April 2019

Duration of Employment: 1- 2 years

Application material: Letter of motivation, CV, list of publications, certificates, 2 references

Reference Person: Prof. em. Dr. Armin Gruen, agruen@geod.baug.ethz.ch

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