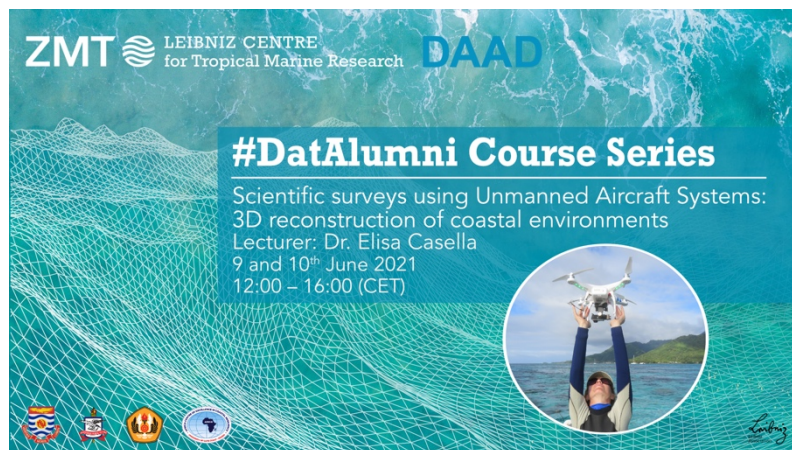

Scientific surveys using Unmanned Aircraft Systems: 3D reconstruction of coastal environments

9th and 10th of June 2021

12:00 to 16:00 (CET)

Both sessions will be online

Leibniz Centre for Tropical Marine Research (ZMT) GmbH
Fahrenheitstraße 6, 28359 Bremen, Germany



(Backgroundphoto: Mudassir Ali, Unsplash; Vector graphics: Vecteezy)

Instructor:

Dr. Elisa Casella

Course description:

The use of Unmanned Aircraft Systems (UAS) is revolutionizing many fields, among which environmental studies and all the sciences where a small-scale aerial view can provide high-resolution information to study natural or human-induced processes. Together with UAS, the development of new-generation photogrammetric methods are building the base of a more efficient way to measure environmental changes.

The aim of this workshop is to provide an introductory course to coastal scientists willing to explore the potential of UAS in their studies and using them consciously. This workshop has also the aim of introducing the photogrammetric method through the Agisoft Metashape suite. Participants will be able to reconstruct the 3D environment of a scene and measure 3D properties of objects in a given reference system using photos.

Target group:

The course is for all ZMT Alumni and Doctoral Candidates at ZMT. Guest researchers and interested Postdocs can participate as well.

Credit:

Participation in both course days is required. You can receive a certificate of attendance for the course.

Preparation: Requirements: Laptop, internet connection, installing a trial version of Agisoft Metashape (details will be provided in due time)

Reading: Optional: Casella et al., 2020 <https://link.springer.com/content/pdf/10.1007/s00367-020-00638-8.pdf>

Preliminary schedule:

WED 9	12:00 - 13:00	Introduction: Drones and GNSS, Workflow of the methodology Discussion with participants on drones scientific interests
	13:00 - 16:00	Planning a survey using a UAS: Regulatory framework, Flight planning, Ground Control Points, Flight programming, Data management. Dr. Gustavo Castellanos-Galindo will present the work <i>"Habitat mapping of remote coasts: Evaluating the usefulness of lightweight unmanned aerial vehicles for conservation and monitoring"</i>
THU 10	12:00 - 12:30	Structure from Motion-Multi View Stereo workflow
	12:30 - 16:00	Hand-on experience with Agisoft Metashape software