

APPLICATION

Please fill out this short application.

<https://goo.gl/forms/NrRAcaASXPuseRs62>

The deadline is April 17. We will let you know if you are invited by April 21, 2017

THIS COURSE HAS NO FEE

QUESTIONS?

contact Prof. Bookhagen
(bodo.bookhagen@uni-potsdam.de) or
Prof. Arrowsmith
(ramon.arrowsmith@asu.edu)



LECTURERS

Bodo Bookhagen is Professor of Geological Remote Sensing in the Institut für Erd- und Umweltwissenschaften at Potsdam University. He applies a combination of remote sensing, field, laboratory, and numerical methods to understand and quantify climatic and geomorphic processes.

Ramón Arrowsmith is Professor of Geology in the School of Earth and Space Exploration at Arizona State University and is guest Professor for “StRATEGY” in 2016-2017 in the Institut für Erd- und Umweltwissenschaften at Potsdam University. He is co-founder of the OpenTopography project and has lead many workshops on high resolution topography.

Martin Isenburg is developer of LAStools, and owner and founder of rapidlasso. LAStools are a fast and memory efficient solution for point cloud processing and can turn billions of points into useful products. He is an outspoken industry leader.

Christopher Crosby is a Project Manager for Geodetic Imaging at UNAVCO. He manages terrestrial laser scanning, structure from motion, InSAR, and high resolution topography programs. He is co-founder of the OpenTopography project and has lead many workshops on high resolution topography.

Geoscience investigations of point clouds

June 7-9, 2017

9-5 pm

B. Bookhagen

R. Arrowsmith

M. Isenburg

C. Crosby

Geo.X



COURSE OBJECTIVES

- Achieve a general understanding for field acquisition of point cloud data from lidar and camera systems on the ground and in the air.
- Appreciate alignment and post-processing tasks to make point clouds useful.
- Recognize major applications of point cloud analysis in geosciences and ecology.
- Increase fluency with point cloud analysis tools.

RELEVANT WEBSITES

University of Potsdam - Remote Sensing - Earth Surface Processes Group (<https://github.com/UP-RS-ESP>)

rapidlasso GmbH fast tools to catch reality (<https://rapidlasso.com/>)

CloudCompare point cloud viewing and processing (<http://www.danielgm.net/cc/>)

High-Resolution Topography Data and Tools (<http://www.opentopography.org/>)

Additional support from



COURSE PROGRAM

Each block will have lectures, computer demonstrations, and moderated discussion. All sessions will be at Potsdam University, Golm

WEDNESDAY JUNE 7th

Introduction to the course

- Course logistics and administration
- Students introduce themselves

Data acquisition

- Field data acquisition using terrestrial laser scanner and UAS-mounted cameras in Golm adjacent to Potsdam University Campus
- Processing introduction

THURSDAY JUNE 8th

Producing, handling, and analyzing point clouds from the previous day

- Focus is on bare-earth generation and geomorphic and ecologic approaches
- Deriving point clouds from terrestrial lidar and overlapping airphotos/images (SfM)
- Aligning, filtering, validating, comparing point clouds
- OpenTopography demonstration

FRIDAY JUNE 9th

Point cloud processing

- classifying point clouds from terrestrial lidar and from SfM (vs. airborne sensors)
- Point classification and deriving bare-earth DEMs; various filter steps; deriving metrics for ecology and forestry (biomass estimations)
- LASTools demonstration
- CloudCompare demonstration

Course ends at 5pm.

