COURSE FEES

Registration deposit  50 €
Students*  20 €
External  40 €

*Including PhD students. Employees and students of the University of Potsdam are exempted from the fee

REGISTRATION (max. 20 participants)

Write an e-mail to: wichura@geo.uni-potsdam.de

and submit the 50 € deposit on the following SBank account:
Henry Wichura
IBAN. DE4410050002154217748
BIC. BELADEBEXXX
Purpose. Topographic Analysis your name

ORGANIZER

“StRATEGy” Coordination Office
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LECTURERS

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 Open-Topography project and has lead many workshops on high resolution topography.

Wolfgang Schwanghart is a Postdoctoral Scholar in the Institut für Erd- und Umweltwissenschaften at Potsdam University. He is interested in Quaternary research, geomorphology and natural hazards. He is the co-author and developer of TopoToolbox MATLAB-based software for topographic analysis.

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.

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.

Advancing understanding of geomorphology with topographic analysis emphasizing high resolution topography

June 12-15, 2017
9-5 pm
COURSE OBJECTIVES

- Achieve a general understanding of sources and characteristics of digital elevation model data
- Appreciate major applications of topographic analysis in geosciences, emphasizing geomorphology
- Increase fluency with topographic analysis tools (esp. TopoToolbox; https://topotoolbox.wordpress.com/)
- Apply understanding to student’s own projects

RELEVANT WEBSITES

MATLAB-based software for topographic analysis (https://topotoolbox.wordpress.com)

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

COURSE PROGRAM

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

MONDAY JUNE 12th

Introduction to the course
- Course logistics and administration; including introduction of student or group projects for the course
- Students introduce themselves with one slide (3 minutes) that is provided in advance
- Science motivations lectures

Data overview
- ArcMap or Matlab review of basic products: DEM (DTM/DSM)s, hillshades, slope maps
- OpenTopography demonstration
- Exercise/discussion: what do you need for your project? What are the considerations?

TUESDAY JUNE 13th

TopoToolbox overview and DEM processing considerations
- Exercise/discussion: Compute topographic roughness, relief, etc. as simple metrics

Drainage networks, DEM preprocessing, hydrologic correction
- Exercise/discussion: DEM selection and preprocessing

WEDNESDAY JUNE 14th

Tectonic geomorphology
- Overview and topographic metrics
- Knickpoint detection
- Field methods for calibration (CRN and Low Temperature Thermochron)
- Exercise/discussion: Discuss strategies for integrated analysis of tectonic geomorphology

TopoToolbox-guided calculation of Chi and Ksn distributions
- Exercise/discussion: set up and start own project analysis

THURSDAY JUNE 15th

Student individual or group presentations
- 5-10 minutes each with basic text and graphics on problem of interest, analyses completed, and results. Brief discussion and feedback

Course ends at noon.