Workshop

Geoscience investigations of point clouds

June 7-9, 2017 (9am - 5pm), University of Potsdam, Campus Golm

Workshop Instructors: Bodo Bookhagen (bodo.bookhagen@uni-potsdam.de), Ramon Arrowsmith (ramon.arrowsmith@asu.edu), Martin Isenburg (https://rapidlasso.com/), Christopher Crosby (crosby@unavco.org)

General Information

The course will take place at the University of Potsdam on Campus Golm. We will meet on June 7 (Wednesday) at 9 am in building 27, room 1.10. The computer pool that we will use will be in building 24 (Thursday, 8th June) and building 25 (Friday, 9th June). A map of campus Golm is available here and here.

We strongly suggest that you bring your own laptop with Matlab (R2016 or newer) installed. Martin Isenburg will be using *lastools* – these run in Windows. We provide some computers with Matlab, but will not be able to provide computer for all participants. Please use your own computer as this will make it easier to continue using the source codes that we generate during the workshop.

Please fill in the required information (*Yes* or *No* and any other pertinent information) in the Google Spreadsheet – this will allow us to plan hardware and software accordingly: https://docs.google.com/spreadsheets/d/1x8gkgPjm0cD0-AJG8n80zgzthWofIPC_o8ExOUhbMko/pubhtml?gid=1655044784&single=true

Important: If you have your own laptop, but no Matlab, we will be able to help out. PLEASE email Henry Wichura (Henry.Wichura@geo.uni-potsdam.de) as soon as possible with your email and contact information. You will then receive a personalized link with your 30-day Matlab license.

Flyer of the workshop: PDF

Github site containing additional information on short course (including all source codes that we will generate throughout the workshop): https://github.com/UP-RS-ESP/PointCloudWorkshop-June2017/ .

We have a PDF with information and instructions on installing required software (link) and some information and introduction to the Matlab processing environment (link).

We will rely on Etherpad (http://etherpad.org/) to exchange and edit codes in real time – if you haven't installed this yet, please do so. Also, we will exchange data via dropbox or boxup links.

This course is followed by a workshop on high-resolution topography (organized by Ramon Arrowsmith, see here http://www.opentopography.org/workshops/advancing_understanding_geomorphology_topographic_analysis).

Schedule

Wednesday, June 7, 2016

Time	Building/Room	Topic
9 – 10	Building 27, room 0.29	Introduction and workshop goals
10-12	Campus Golm	Terrestrial Lidar and drone-based photography data collection on campus Golm (Note: This will be outside. Please bring adequate cloth and sun protection. In the unlikely event of rain, we will do indoor scanning, but no indoor drone flying).
12-13		Lunch break
13-16	Campus Golm	Lidar and drone data collection, continued
16-17	Building 24, room 0.07	First lidar and drone point-cloud assessment, preprocessing

Thursday, June 8, 2017

Time	Building/Room	Topic
9 – 12	Building 24, room 0.07	Point cloud processing, georeferencing, and accuracy assessment
12-13		Lunch break
13-16	Campus Golm	Point cloud accuracy assessment, alignment of several point clouds, combining point clouds from several sources, change detection with point clouds

Friday, June 9, 2017

Time	Building/Room	Topic
9 – 12	Building 24, room 0.07 or Building 25, computer pool (D.0.02)	Point-cloud classification and processing of urban and natural environments (lastools)
12-13		Lunch break
13-17	Building 24, room 0.07 or Building 25, computer pool (D.0.02)	Chris and Ramon will give a demo and introduction of OpenTopography (http://www.opentopography.org/). Point-cloud classification of dense datasets from Structure-from-Motion and terrestrial lidar scanners (lastools), generating digital elevation models and canopy height models