GSA 2019 Short Course: 501. High Resolution Topography and 3D Imaging I: Introduction to Terrestrial Laser Scanning

868   Chris Crosby   September 20, 2019   [Short Courses](#)   4938

Geological Society of America Annual Meeting Short Course, Phoenix, AZ

501. High Resolution Topography and 3D Imaging I: Introduction to Terrestrial Laser Scanning

Fri., 20 Sept., 8 a.m.–5 p.m

Room 103AB, West Building, Phoenix Convention Center

Instructors: Christopher Crosby & Keith Williams, UNAVCO

Abstract: This one-day course will provide faculty, students, and professionals with an introduction to terrestrial laser scanning (TLS a.k.a., ground-based lidar) for research and education. TLS provides high-resolution three-dimensional images of geologic features and is a powerful tool for applications ranging from outcrop mapping to analysis of earth-surface processes. The course will focus on TLS technology, data collection, processing and analysis, and examples of science and educational applications. A combination of lectures and hands-on demonstrations of TLS equipment and data processing will be used.

Agenda

8:00 AM   Welcome & Course Introduction, About UNAVCO

8:30 AM   [Intro to laser scanning, Applications Examples](#) (Crosby)

9:30 AM   Break

9:50 AM   [Overview of Data Acquisition Concepts & TLS Workflow](#) (Williams)

11:00 AM   Hands on demos w/ scanner (1/2 group, 2x scanners - outside)

Overview of Data Processing and Analysis (1/2 group - classroom)

12:30 PM   LUNCH

1:30 PM   Hands on demos w/ scanner (1/2 group, 2x scanners)

Overview of Data Processing and Analysis (1/2 group - classroom)

3:00 PM   [Future trends, community support resources, educational resources](#). Afternoon session Q&A and concluding thoughts.

- [Analyzing High Resolution Topography with TLS and SfM](#) (SERC-hosted resources and curriculum for field education with TLS & SfM)
- [UNAVCO Geodesy Field Education resources](#) (links to UNAVCO support resources for field education, including TLS and SfM).

3:45 PM   Review scan data

4:20 PM   Participants fill out GSA course evaluations

4:30 PM   Adjourn

Additional resources:

- [hh_tls_14_14022014_allreturns_upper.laz](#) (Rim Fire Yosemite, NP TLS sample dataset from S. DeLong, USGS)
- [2017 Big East LAS](#)
- [2018 Big East rockfall LAS](#)
- [2018 Big East rock block LAS](#)
- [2018 Big East all data LAS](#)

Online URL:

https://kb.unavco.org/article/gsa-2019-short-course-501-high-resolution-topography-and-3d-imaging-i-introduction-to-terrestrial-laser-scanning-868.html

https://kb.unavco.org/article/gsa-2019-short-course-501-high-resolution-topography-and-3d-imaging-i-introduction-to-terrestrial-laser-scanning-868.html