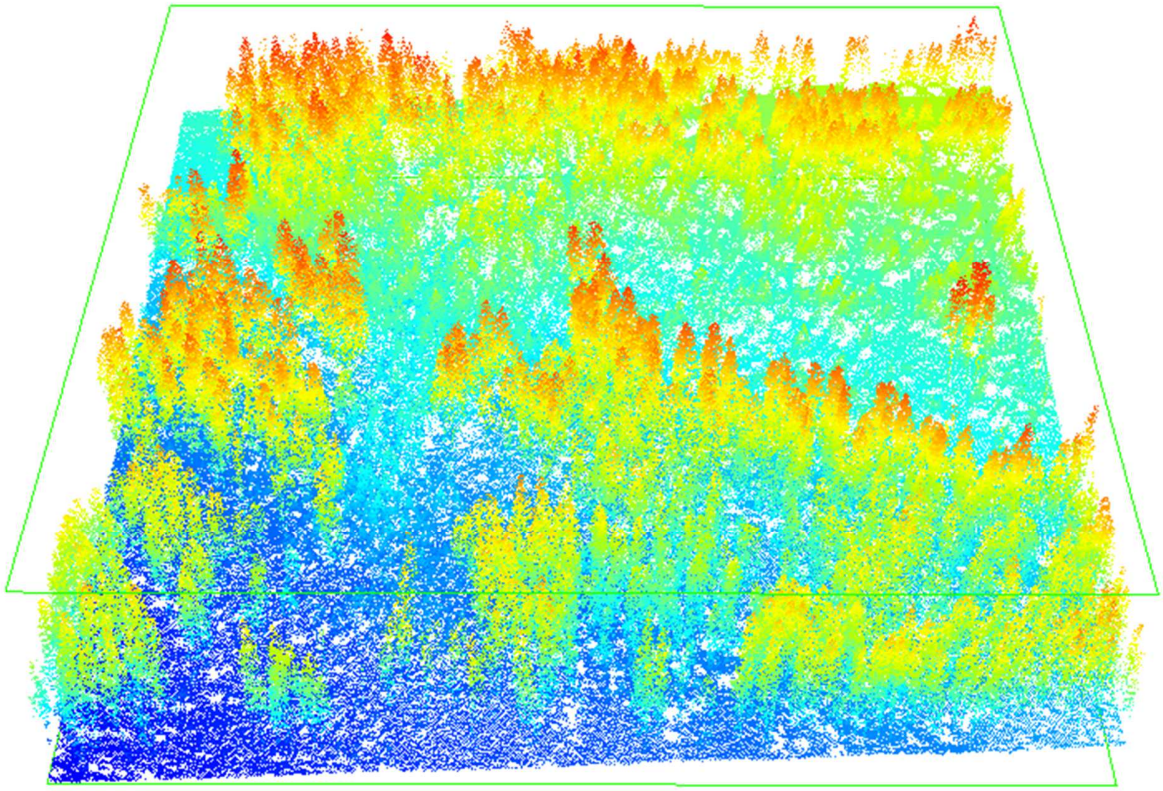
Seminar title: Introductory LiDAR data analysis

Lecturer: Hooman Latifi

Course intro:

Along with other types of remote sensing data, the data from active Light Detection and Ranging (LiDAR) systems have been successfully applied and validated by numerous studies on various parameters of the Earth surface, including forest, urban and terrain domains. LiDAR embraces a range of active remote sensing systems mounted on different platforms, which provide valuable information on horizontal and vertical structure of the earth surface by measuring the travel time of laser pulses in visible and near-infrared spectral domains. In addition, the intensity of the laser returns is typically recorded and is nowadays of crucial importance as an alternative to passive optical information for applications like landuse or tree type mapping.

This course attempts to provide students with a brief overview on the theory and applications of airborne LiDAR data. Following a short introduction to the theory and functioning of LiDAR sensors, a number of practical exercises will be taught to illustrate how the LiDAR point clouds can be applied to extract information on terrain, surface and vegetation structure. These information are essential for further applications for area-based models of forest and landscape structural attributes.