

# Coregistration of airborne laser scanning data and aerial images

## Abstract

This thesis is dealing with the co-registration of aerial laser scanning and aerial images. Theoretical part with research of current methods puts emphasis on methods suitable for remote sensing datasets. Part of the thesis is about pre-processing data for co-registration and DSM production. Selection of co-registration methods for remote sensing is based on previous researches. Selected co-registration methods are applied on datasets from EuroSDR research project and ČÚZK dataset. Application is realised by programming codes and functions that were created for this purpose in Matlab. Possibilities of usage, advantages and disadvantages of methods are being mentioned in the next parts of the thesis with emphasis on time of the computation and final accuracy. The function programmed in Matlab allows comparison of co-registration methods and allows the user to decide which of the co-registration methods to use on input datasets. Discussion section describes the possibilities of method extensions and problematic parts across the whole co-registration process.

**Keywords:** co-registration, laser, scanning, images, photogrammetry, remote sensing, coordinate, image matching.