


Maren Benjaminsen

Department of Civil
and Environmental
Engineering

Spring 2018

UAV-based method for
collection of data for
river engineering

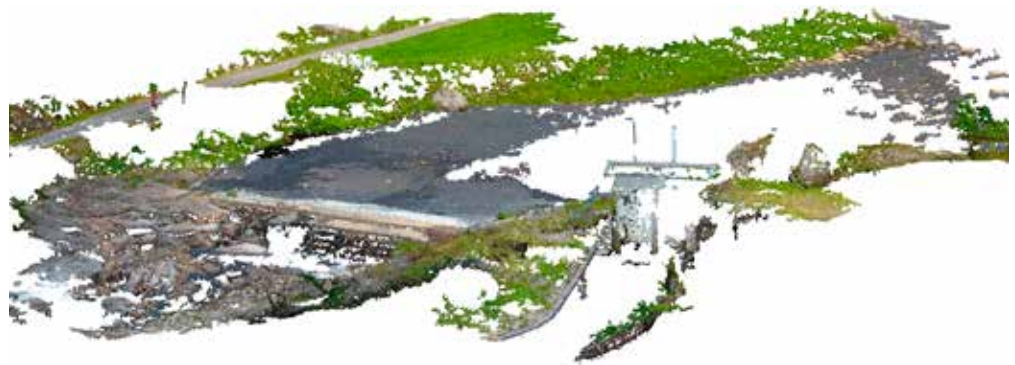
Supervisor:
Nils R  ther
In cooperation with:
FIThydro



Background

Unmanned Aerial Vehicles (UAVs) are increasingly used in the field of engineering surveys. In river engineering, or in general water resources engineering, UAV based measurements have a huge potential. For instance, indirect measurements of the flow discharge using e.g. large-scale particle image velocimetry (LSPIV), particle tracking velocimetry (PTV), space-time image velocimetry (STIV) or radars have become a real alternative for direct flow measurements.

Within this thesis, two methods for the detection of the surface velocity will be compared. Based on the project work where the efficiency of different tracers have been tested, several test cases will be investigated. The goal of the thesis is to define the application range of such a method and to investigate further potential of this technique. The thesis is coupled to several projects where this technique can be a useful source of data collection. Test cases of the ongoing EU-project FIThydro will be investigated. FIThydro is about the enhancement of fish population in regulated rivers and surface water velocities are central data input for such investigations.



Digital Elevation Model in VisualSFM