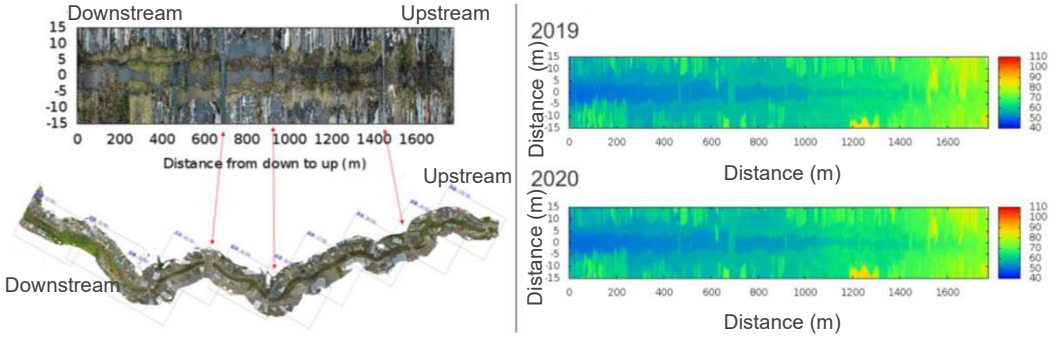
Tohoku Univ. Technology

Program for automatic extraction and longitudinal visualization of topographic cross section



Easy viewing of curved topography! Useful program for management of river, road, waterway, coastline, etc.!

Overview

Point cloud data obtained from UAV photogrammetry is processed to create orthomosaic image, bird's eye view and 3D model, in order to understand the topography. However, in curvilinear topography such as river, road, waterway and coastline, it is difficult to grasp the whole picture of the curvilinear topography and its surrounding areas because these models are displayed in curvilinear form as they are.

This technology provides a method and a program that can easily grasp curved topography visually. It has concretely the following features.

◆Automatic extraction of cross-sections from 3D point cloud

◆Easy viewing of the entire image by linear arrangement of curved topography

◆Able to compare topography changes over multiple time period

◆Obtain elevation of cross-sectional and longitudinal sections of the target topography

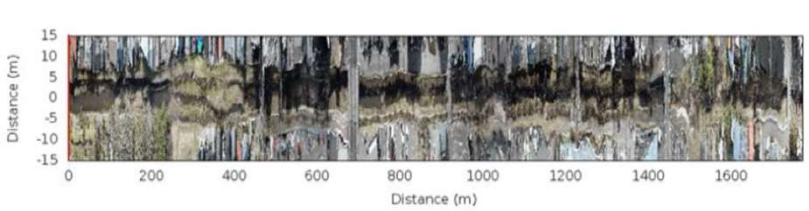
◆Display seasonal changes of the surrounding environment (vegetation, etc.)

Product Application

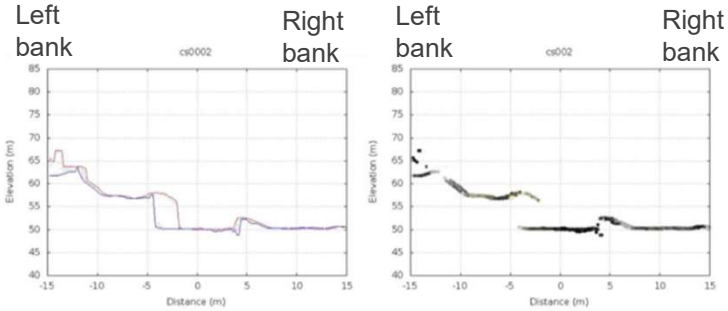
- ☐ Topography management and survey
- ☐ Map creation

① longitudinal view and ② cross-sectional figure at a given point

① Right bank / Left bank



② (Left: max/min elevation values. Right: elevation as RGB information.)



Related Works

HASHIMOTO Masakazu, SATO Shosuke, ICHIKAWA Ken, NARADATE Susumu, SATO Keiji, AMAYA Kaori, NASUNO Arata:
“Estimation of flood overtopping points using 3D point cloud data generated by UAV approach”, 38th Japan Society For Natural Disaster Science annual conference abstract, p89-90, 2019

IP Data

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