



Quality assessment of OpenStreetMap water mask using LANDSAT 8 imagery and Google Earth Engine

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OpenStreetMap is one of the most used and cited Volunteered Geographic Information (VGI) platforms with an increasing popularity in the last years. Originally developed as a public global road database it is also used to digitize and share many other natural and manmade geospatial features, including water related such as rivers, lakes and coast boundaries. Due to its free nature, OpenStreetMap is a very attractive dataset to be used for many environmental applications, such as simulation of water flow in rivers, lakes and coastal zones. However, there is a lack of academic literature focusing on validation of the water mask quality used in OpenStreetMap.

In this work we will analyse the quality of OpenStreetMaps water using a new water mask extracted from medium resolution (15-30m) multi-spectral imagery measured by the LANDSAT 8 satellite during 2013-2014.

In order to generate the water mask from LANDSAT 8 imagery a number of essential steps need to be performed, such as the selection of cloud-free pixels, delineation of the maximum and minimum annual water mask and detection of false positive pixels due to mountain and cloud shadows. We will use Google Earth Engine (GEE) as a high-performance parallel processing platform to process LANDSAT 8 imagery.