



## **Automated extraction and fusion of the intertidal and subtidal bathymetry from the Landsat and Sentinel satellite data**

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Monitoring of the intertidal and subtidal bathymetry at large spatiotemporal scales using traditional surveying methods is a challenging and costly task. Well established methods of remote sensing and increasing frequency of freely available satellite data enable automated monitoring of intertidal and subtidal bathymetry. A number of methods exist to extract intertidal bathymetry by combining the observed water masks with the water level data simulated by intertidal numerical models and local water level measurements. At the same time, the light attenuation in a water column, observed by optical satellite sensors, can be used to estimate water depth, providing a way to estimate subtidal bathymetry. In this research, we will discuss how these both methods can be combined to generate a consistent intertidal and subtidal bathymetry data. Challenges, such as automated processing at a continental scale (using Google Earth Engine), calibration, and validation of the algorithm will be discussed. This research is used to improve the European Marine Observation and Data Network (EMODnet) bathymetry and is supported by the European Commission and Dutch Ministry of Infrastructure and Water Management.