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Master Thesis Defense

Entitled
COASTAL BATHYMETRY OF UAE USING SATELLITE-BASED REMOTE SENSING DATA

by
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Abstract

The thesis focuses on studying coastal bathymetry in the United Arab Emirates using satellite images. Developing a coastal bathymetry map in the coastal areas of the United Arab Emirates using optical satellite data and analyzing quality and accuracy. Multiple algorithms are used to draw these maps, and the project involves using the linear scale ratio to derive bathymetry in areas such as Fujairah Port and Dalma Island using Sentinel-2 images. Multiple tools in the SNAP application platform were used to perform these operations, including atmospheric correction, resampling, ground masking, sunshine removal, and dark object subtraction. Finally, the Sen2coral plugin was used to manually verify the steps using plug-ins derived from the Sunglitter and Bathymetry software, and the results showed that the manual application of image processing based on these principles was successful.

Keywords: bathymetry, coastal, United Arab Emirates, satellite images, Fujairah Port, Dalma Island, SNAP, Sentinel-2