Evaluates the Possibility of Shallow Water Bathymetry Mapping Using Optical Satellite Imagery

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SUMMARY

The shallow water depth data is very important for applications in marine engineering, environmental management and hydrological applications. The article studies the method of depth estimation, which evaluates the possibility sea-bed depth mapping of shallow water areas around island from optical satellite images. The study was experimentally done by using the Lyzenga common method for shallow waters area around the An Bang island of the Spratly archipelago - Viet Nam from the Sentinel-2 multi-spectral satellite image. The results show that the estimated depth from the image is -14.7 m, the depth estimation model achieved a high correlation of 0.89, the possibility of establishing a depth map from the Sentinel 2 satellite image was achieved at a scale Average 1:25,000 - 1:50,000. In addition, the establishment scale of the map depends on many factors to calculate the construction of models such as: image resolution, input points precision, computational model construction, preprocessing algorithm... The research results will be the foundation for step by step researching topographic sea-bed mapping in shallow water area around islands of the Spratly archipelago from satellite imagery.

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