

Optimal Conditions of Using Satellite Derived Bathymetry (SDB) Method in the Middle Adriatic Sea

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SUMMARY

Sea depth data was by far the most expensive spatial data. Continental shelves make up about 8% of the entire area covered by oceans and seas and we can assume that at least 50% of the total global area of the continental shelf (shelf depth is shallower than 200 m) was unsurveyed or surveyed with horizontal and vertical inadequate accuracy defined according to IHO S-44 standards.

Therefore we need to find new methods of bathymetric survey. One of these methods is relatively new method called "Satellite Derived Bathymetry" (SDB), similar or sub variant to the LIDAR bathymetry survey method. SDB uses satellite or other remote multispectral imagery for depth determination. This method is founded on analytical modelling of light penetration through the water column in visible and infrared bands.

In this research SDB will be used in the middle Adriatic Sea, which has the specificity of the shallow archipelago sea. The research of optical characteristics in the coastal area of the middle Adriatic Sea, which cover channel areas and semienclosed bays which are far from the river mouths, indicated that oceanic optical water type II was observed (according to Jerlov classification) where euphotic zone (1% PAR) reaches below 45 m.

SENTINEL 2 satellite free of charge data will be used as a good foundation for wider use of commercial satellite data with higher resolution. Problems in selecting satellite images (transparency of the atmosphere and water column, finding the best reflection of the wave, etc.) will be presented also. Furthermore, coast benefit analysis of these relatively new bathymetry determination method will be carried out.

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