Challenges of Nearshore Bathymetric Mapping Using Satellite Derived Bathymetry in Malaysia

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SUMMARY

Over the last two decades, the extensive development of satellite derived bathymetry (SDB) has brought in new insurgency to the hydrography revolution around the globe. With the emerging geospatial technology, hydrographic communities are able to unlock the secrets of the seabed using sophisticated SDB modelling, namely, empirical, analytical, and semi-analytical approaches. Apparently, there are an increasing number of applications in which SDB is not only being accepted as a reconnaissance tool, yet is also being recognised as an alternative source of data by some hydrographic offices in updating their nautical charts. Conversely, this technique is still less explored, especially in the tropical coastal water regions, including Malaysia. Thus far, the majority of the previous studies only established bathymetric retrieval algorithms which are feasibly workable for benthic survey and clear shallow water in Europe and America. It is reported that SDB is less effective in the turbid tropical water regions and it is not applicable to shallow coastal water that have high turbidity and poor reflecting bottom when the transparency decreased. In strictly sense, this paper describe the challenges in nearshore bathymetric mapping using SDB approach in Malaysia. The mapping challenges and contributing factors that effect the results are presented. Finally, some relevant issues and the limitation foreseen are also highlighted for the forthcoming development.