

STUDY ON TYPICAL SEABED CLASSIFICATION OF SHALLOW WATER AREAS AROUND ISLANDS BY REMOTE SENSING AND GIS TECHNOLOGY

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ABSTRACT

The paper studies the application of remote sensing technology and GIS processing techniques in combination with the field survey data in the shallow coastal water area in the Truong Sa archipelago to establish distribution maps sea bottom pattern. Use the invariant index to determine the effect of the water column on the spectrum of each type of bottom habitat. Image classification results show that: Basically, the coral reefs are living coral reef ecosystem with high coverage at depths greater than -5m. In addition, shredded sandy beaches of coastal coral are developed in two distinct seasons. The post-categorical test results show that the overall accuracy of the image classification process is 95% and the Kappa coefficient is 0.92.

MONITORING RICE AREA AND GROWTH STATUS IN THE MEKONG DELTA, VIETNAM USING MULTI-TEMPORAL SENTINEL-1 DATA

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ABSTRACT

Food security has become an important issue as the population has increased rapidly in the recent years in Asia and Vietnam in particular. Specially, the impacts of climate change due to global warming and sea level rise have affected on the agricultural activities in the Mekong Delta which is almost rice growing area. Therefore, building a system to monitor rice area, crop calendar, growth status and production is essential. Recently, Sentinel-1A & -1B SAR satellites launched are not affected by atmospheric, sunlight conditions and can get signal through clouds and smoke even in rainy season, in day or night if comparing with optical data. SAR data can provide sustainable solutions to the challenges on mapping and monitoring rice cropping systems in tropical countries, Vietnam for example. In this paper, we present research results for identifying rice area, growth stages by using multi-temporal SAR imagery of C-band Sentinel-1 with dual-polarizations VH and VV, 20 m spatial resolution. The study has collected field survey data at the same time of Sentinel-1 acquired. This data with a high repeat-pass frequency which have been showed effective for the mapping of rice fields and growth stages.