



Distribution of Internal Waves in the South China Sea from Satellite Ocean Color Imagery

C. R. Ho (1), F. C. Su (1), N. J. Kuo (1) and C. C. Tsao (2)

(1) Department of Marine Environmental Informatics, National Taiwan Ocean University, Keelung, Taiwan, (2) Department of Social Studies Education, National Taipei University of Education, Taipei, Taiwan (b0211@mail.ntou.edu.tw / Fax: +886 2-24620912)

Internal waves in the South China Sea (SCS) have been observed by satellite ocean color imagery such as SeaWiFS (Sea-viewing Wide Field-of-view Sensor) and MODIS (Moderate Resolution Imaging Spectroradiometer). It is acceptable to observe the internal wave while its width is larger than the image resolution (1.1 km). Internal waves in the SCS are well known for large scales and large amplitudes. In general, the amplitudes of internal waves in SCS are larger than 100 m and the along crest lengths are larger than 200 km. Therefore, they can be observed successfully with SeaWiFS and MODIS chlorophyll imagery. The spatial and temporal distributions of internal waves based on SeaWiFS and MODIS imagery in the northern SCS have been calculated. Most of them are shown near the Dongsha atoll. No internal wave is found east of the Luzon Strait. More internal waves are found after the full moon and new moon. This indicates that the generation of internal waves in the northern SCS may relate to the internal tide. Besides, from chlorophyll imagery, it is found that the chlorophyll concentration is lower than surrounding waters when depression internal waves pass and is higher when elevation internal waves pass. This phenomenon can be explained by the DCM (Deep Chlorophyll Maximum) model and the amplitudes of internal waves in the euphotic zone can also be derived.