

ABSTRACT

Sea depth (bathymetry) provide important variety information about the sea area. In addition to the shipping navigation, sea depth also useful in natural resources utilization, early warning systems and impact simulation of the disaster. Ocean depth measurements can be done manually by boat, but it takes very long time. The very fast information needs about bathymetry data demand system development which could replace the manual measurement by utilizing other technologies such as remote sensing via satellites. Sea surface colour when seen in satellite images have colour gradations as a result of the light reflecting by variation of ocean depths. By knowing the exact depth of the sea in an area and know the surface color at that position can be created a system that can identify the depth of the sea at a certain position from its sea surface colors. The system is constructed using the data results from ocean depth manual measurements and combined with satellite image data in the same position. Then learn that combined data using Neuro-Fuzzy technique with ANFIS (Adaptive Neuro-Fuzzy Inference System) methods creating the identification model with performance can be determined from the value of MAPE and MSE. Results of modeling identification, obtained system that can perform identification very well with the error obtained during the testing process by MAPE 9.0024% and MSE 0.0034.

Keywords: bathymetry, satellite imagery, neuro-fuzzy, ANFIS