

Spatial and Field Analysis of Physical Parameters of Chabahar Bay Water in Winter Monsoon (2006-2007)

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Abstract

In spatial statistics predicting an unknown amount of random field in concrete situation based on observations, constitutes the best linear forecasting method. In some applications, in every spatial position, in addition to the variable under investigation, other auxiliary variables may be available for increasing the forecasting accuracy. In this study some physical parameters of the Chabahar Bay were measured by CTD sampling in different layers of water. These included the temperature, salinity, and density of the waters. The general goals of this study include the following: finding out the water density distributions under the influence of other physical parameters of the Bay, the application of new statistical methods such as kriging, co-kriging and inverse-distant weighted, and the forecasting of the aforementioned parameters and density distribution for the whole of the Bay. The statistical methods have been compared in terms of accuracy. Results of density cross-validation analysis showed that the co-kriging method is more accurate than the other methods and that this method is suitable for studying environmental phenomena. The spatial distribution of density has shown that this parameter decreases towards the shore in the winter monsoon of 2006-2007.

Keywords: Chabahar Bay, Spatial analysis, Kriging, Co-kriging, Inverse-Distance Weighted, Gonou Hurricane.
