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Comparison of different Geostatistical Approaches to map Sea Surface Temperature (SST) of Southern South China Sea

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Sea surface temperature (SST) variation provides vital information for weather and ocean forecasting especially when studying climate change. Conventional methods of collecting ocean parameters such as SST, remains expensive and labor intensive due to the large area coverage and complex analytical procedure required. Therefore, some studies need to be conducted on the spatial and temporal distribution of ocean parameters. This study looks at Geo-statisctical methods in interpolating SST values and its impact on accuracy. Two spatial Geo-statistical techniques, mainly kriging and inverse distance functions (IDW) were applied to create variability distribution maps of SST for the Southern South China Sea (SCS). Data from 72 sampling station was collected in July 2012 covering an area of 270 km x 100 km and 263 km away from shore. This data provide the basis for the interpolation and accuracy analysis. After normalization, variograms were computed to fit the data sets producing models with the least RSS value. The accuracy were later evaluated based on on root mean squared error (RMSE) and root mean kriging variance (RMKV). Results show that Kriging with exponential model produced most accuracy estimates, reducing error in 17.3% compared with inverse distance functions.