Scientists from National Institute of Ocean Technology (NIOT) find a novel approach to predict chlorophyll-α in coastal-marine ecosystems

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Chlorophyll-α is an established marker for phytoplankton wealth and biomass among essential nourishment makers in an oceanic biological system. The degree of Chlorophyll- α as a component of natural parameters have been seen as very beneficial for the administration of the seaside biological systems. This examination built up a scientific model to foresee Chlorophyll-α fixations dependent on an information driven demonstrating approach. Understanding and modeling the level of Chlorophyll- α as a function of environmental
parameters have been found to be very beneficial for the management of the coastal ecosystems. This study developed a mathematical model to predict Chlorophyll-α concentrations based on a data driven modeling approach. The prediction model was developed using Principal Component Analysis (PCA) and Multiple Linear Regression analysis (MLR) approaches. The predictive success ($R^2$) of the model was found to be $\sim 84.8\%$ for first approach and $\sim 83.8\%$ for the second approach. A final model was generated using a combined principal component scores (PCS) and MLR approach that involves fewer parameters and has a predictive ability of 83.6%. The PCS-MLR method helped to identify the relationship amongst dependent as well as predictor variables and eliminated collinearity problems. The final model is very straightforward and intuitive and can be used to understand real system operations.

The detailed paper which was made available online on 14 January, 2020 at: 

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