

# Time Series Analysis and Geostatistics in R

## August 13, 2019

The Box (Wiener Str. 7),  
 Leibniz Centre for Tropical Marine Research (ZMT) GmbH  
 Fahrenheitstraße 6, 28359 Bremen, Germany

- Instructors:** Prof. Dr. rer. nat. João Marcelo Brazão Protázio
- Course description:** The main idea of the Workshop is to present, in a clear and general manner:  
 [1] How to conduct a time series analysis, and then model and obtain predictions for this series, and  
 [2] How to use georeferenced data (spatial sampling) to estimate maps of these properties using regression and geostatistical simulation.
- Target group:** Anyone interested in Time Series Analysis and Geostatistics (Knowledge of R is an advantage).
- Preparation:** R application installed ([www.r-project.org](http://www.r-project.org))

### Preliminary Schedule

<b>TUE 13</b>	08:30 - 12:30	<b>Time Series Analysis</b> <ul style="list-style-type: none"> <li>• What is Time Series Analysis?</li> <li>• Introduction to ARIMA (Autoregressive integrated moving average)</li> <li>• Box-Jenkins Methodology</li> <li>• Applications in R</li> </ul>
	12:30 - 13:30	<b>Lunch Break</b>
	13:30 - 17:30	<b>Geostatistics</b> <ul style="list-style-type: none"> <li>• What is Geostatistics?</li> <li>• Examining the input data and statistical data inspection (Preprocessing)</li> <li>• Experimental Variogram</li> <li>• Fitting the Variogram</li> <li>• Cross Validation</li> <li>• Kriging Interpolation</li> <li>• Simulation</li> </ul>