

Basic Skills and Methods Course

Statistics - An Introduction to Hypothesis Testing and Parameter Estimation (using R)

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Part 1: 18 – 20 January, 2017

Part 2: 30 January – 1 February. 2017

Objectives

Part 1: The course starts with the basic rules of probability, some concepts of descriptive statistics, and a short discussion of the most common probability distributions (binomial, Poisson) and probability density functions (normal, t). The most common tests (t, Fisher-Behrens, ANOVA, Kolmogorov-Smirnov; *Zar, 2010*) are explained and applied.

Part 2: Parameter estimation (including least-squares) is introduced based in part on *Zuur et al. 2007*.

It is highly recommended that you have participated in Part 1 in order to follow Part 2!

Prerequisites

Basic knowledge of R is requested.

Target Group

Early career scientists with an interest in hypothesis testing and parameter estimation.

Please note that this course does not cover time series analyses. The latter are covered in a separate MARUM / GLOMAR course.

Please note:

*Participants who would like to **bring their own laptops** may do so but are responsible to make sure that the software is running properly by the beginning of the course.*

Instructions for downloading and setting up R are available at <http://www.r-project.org>.

Please download & install RStudio as well. R and RStudio are freely available and can be used on PCs and Macs.

Location and schedule

AWI Bremerhaven, Am Handelshafen 12, 27570 Bremerhaven, Room E-4025

Part 1	18- 20 January 2017	09.00 – 16.00
Part 2	30 January - 1 February 2017	09.00 – 16.00

Literature

Zar, J.H., Biostatistical Analysis, fifth edition, Prentice Hall, 2010.

A good introduction to the frequentist approach to hypothesis testing including data sets and detailed explanations of test procedures; no computer codes provided.

Zuur, A.F., E.N. Ieno, and G.M. Smith, Analysing Ecological Data, Springer, New York, 2007. [Data & R code available: <http://www.highstat.com>]

Registration

To register for this course, please send an e-mail to info.polmar@awi.de.

Please note that your registration will be binding.

The registration deadline for this course is **15 December 2016**.

Any enquiries regarding the course should be addressed to info-polmar@awi.de or glomar-courses@marum.de.