MARUM / GLOMAR Expert Course:

Statistics I: Introduction to Statistical Methods in Geosciences

Dr. Maria Ruiz

Dep. of Geosciences, University of Bremen

22-25 August 2011, MARUM, Bremen

Objectives

Statistical methods are widely used in the geosciences to analyse data in a systematic and quantitative way. Specifically, statistical methods offer the only means to test scientific hypotheses quantitatively. The theory and computation behind statistical methods may seem highly demanding to the non-expert, but their strategy, applicability and meaning in a given earth scientific context can usually be grasped in a practical and intuitive way. Thanks to existing powerful and user-friendly software packages, the most complex statistical techniques are easily accessible - a chance as well as a danger for every eager practitioner.

This **introductory** course will take a 'hands-on' approach to statistics by briefly introducing and applying statistical methods, which are often used in geosciences. The course will give a general overview of the statistical methods most commonly applied by using different software packages and with special emphasis on practical examples.

Topics
- Elemental Statistics
    - Basic concepts
    - Errors
    - Distribution functions
- Significance tests (t-test, F-test, ANOVA...)
- Outliers
- Regression and correlation
- Multivariate analysis (Cluster analysis, MLR, PCR...)

- ➢ Practical course - Example applications

- ➢ Tools
    - Advanced Excel (Data Analysis, Solver, Macros)
    - Matlab

Location
MARUM, University of Bremen, 28359 Bremen, Germany, Room 2070

Time
09.00 – 13.00

To subscribe
Please send a mail to Christina Klose (ecolmas@uni-bremen.de). Please give your name, status (e. g. PhD student), institute / university and department or faculty.