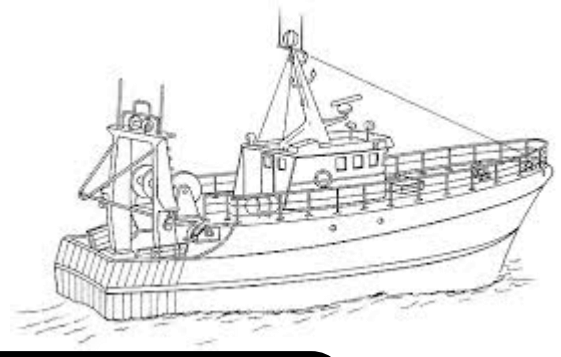


Methods of Data Analysis in Oceanic and Atmospheric Sciences

Hosted by: Dr. Shane Elipot
Associate Scientist – University of Miami



Workshop date: 14 - 25 August 2017

Due date for applications: 30 June 2017

Applications to be forwarded to: asca@saeon.ac.za

Workshop venue: University of Cape Town, Rondebosch, Cape Town, 8001

Workshop Goal

The goal of this course is to teach state-of-the-science methods of analyses of observational and numerical data in oceanic and atmospheric sciences. This field of research has clearly evolved in the recent decades as the volume of oceanographic and climate data has dramatically increased, and this implies that novel and informed data analyses techniques are warranted for analyses.

Breakdown

Week 1: Will be devoted to formal lectures (1.5 to 2 hours) in the mornings, emphasizing examples from the scientific literature and current research. While practical “lab” sessions (2 hours) in the afternoons will have the students apply the methods covered in the morning to real data, on laptop computers. The main tool for the practical session will be computational software like Matlab or the similar free software Octave which runs on multiple platforms (GNU/Linux, Mac, BSD, and Windows).

Week 2: Will be akin to extended office hours during which the enrolled students will be assisted through one-on-one sessions with the instructor for applications to their own research and dataset.

Target Audience

This workshop targets early career researchers such as Postdoctoral researchers, postgraduates (Masters and PhD) and students (honours) will be considered if they have a letter of support from their supervisors. Travel funding will not be supplied but there is no charge for the course.

Note: The course will be limited to 16 students.

Provisional Curriculum

- Statistical principles (probability distribution functions, hypothesis testing, uncertainties)
- Analysis of variance, covariance and correlations
- Regressions and trend analyses
- Time series analyses, including spectral analyses
- Spatiotemporal analyses (eigen methods)

Application requirements:

- CV
- Motivational letter

