



AMAZALERT Delivery Report

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Introduction/summary

During the AMAZALERT project period training sessions on specific topics were organized in conjunction with project conferences or workshops. The training sessions were focused on students in Latin America.

In total 5 training sessions have been provided, therefore two more training sessions could be offered as compared to the originally proposed, because they could be organised at minimal extra cost, and because they were deemed necessary to, e.g. carry out the field work or to enhance our thinking on analysis of early warning signals.

Four trainings were held in Brazil and one in Wageningen, the Netherlands in 2012 and 2013. This document provides an overview and short description on the different trainings held.

Training sessions

International workshop on ENVIRONMENTAL MODELLING IN AMAZONIA/ Side event

AMAZALERT scientists co-organised the LBA workshop 'Environmental Modelling in Amazonia', held in Manaus, 25-29 November 2013. AMAZALERT supported this workshop through covering of travel costs of its scientists visiting this workshop. The main objectives of the event were to synthesise the scientific advances made to date in understanding the functioning of the Amazonian socio-ecological / environmental systems and to identify ways of integration among disciplines, and among established research programmes in Amazonia.

In addition to the main event, two short courses were organized as side events on modelling and on scientific publishing.

A short description of the short courses is as follows.

Short course – Introduction of environmental modelling in Amazonia: surface modelling, landscape, water and biogeochemistry
24-25 November 2013,

Guest Instructor: **Antonio Donato Nobre**, Ph.D. (CCST/INPE)

The short course (offered in Portuguese) offered a brief presentation of the basic concepts used in environmental modelling, critically reviewing the scientific and philosophic foundations needed to understand the potential capacity and limitations of environmental models. As example and also focusing on practical exercises, the course addressed terrestrial surface modelling, including landscape terrains, water on its interfaces and biogeochemistry cycles among those systems. Two models were presented in a laboratory, which can be employed according to the interest of the participants.

Short course - Writing science papers for publication in top journals
25 – 26 November 2013

Guest Instructor: **John Grace**, Emeritus Professor, School of GeoSciences, University of Edinburgh, Scotland

This short course was suitable for postgraduates and postdoctoral researchers, who were invited to bring any ideas for papers with them, and offered coaching in interactive sessions to exercise scientific writing of such ideas.

The course addressed topics as:

1. *Writing for publication in a journal in general*
Communication in science, why we do it; importance of submitting papers during your PhD; how to build numbers and quality of papers
2. *Types of papers*
Reporting original research findings, Reviews, Technical reports in journals, Chapters in books
3. *How to make a start*
You need a 'story' to tell, with supporting data, On a single page of paper, write the title, sketch the main Figures and write the main points/arguments, Discuss with your supervisors/co-workers. Try it now! Outline a 'story' from your own work.
4. *The parts of a paper, what you must write in each, how to be concise.*
Title, Abstract, List of Key Words, Introduction, Methods, Results, Discussion Conclusions, Acknowledgements, Reference List, Supplementary On-line materials. Variations from the standard format, Nature and Science.
5. *Effective use of English in science*
Guidelines, common mistakes, paragraphs, structure, tenses, use of references, quality of writing, avoiding repetition and ambiguity.
6. *Organising your work, moving from outline to final draft*
Submitting papers, selection of a journal, mechanics of submission, dealing with referees/editors comments, dealing with proofs.
7. *Etiquette of Authorship*
Who goes on the authorship line, and in what sequence, dealing with senior colleagues/supervisors, who should be mentioned in Acknowledgements.
8. *When it's published, make the most of it*
Self-advertising by circulating pdfs, publicity and the media, watching citations rise.

Project Midterm Meeting: Training on Tipping points

During the AMAZALERT midterm meeting, held on March 2013, Wageningen, the Netherlands a special training session was also organized by ALTERRA, focused on Wageningen students and AMAZALERT scientists. This session was organized in form of guest lectures by specialists on tipping points, who offered training on tools and approaches to detect tipping points in data sets.

Tipping points workshop

14 March 2013, Wageningen, Netherlands

Programme:

- 10:30 - 11:30 Discussion and overview of the various AMAZALERT scientists on what kind of data sets/model results they have on offer, as well as an overview (first shot) of how we would see an early warning system. How would it link with our stakeholder workshops?
- 11:30 - 12:30 Lecture by Valerie Livina (University of East Anglia, UK) on: Principles of early-warning signals and introduction into analysis tools + discussion.
- 13:30 - 15:00 Hands-on workshop on early-warning tools by Valerie Livina and Chris Boulton (University of Exeter, UK). Last 20 minutes discussion on how to apply the tools to AMAZALERT.

INLAND Workshop (Integrated Model of Land Surface Processes)

In 27-28 November, 2012, at INPE premises in Cachoeira Paulista, SP, Brazil, a 2-days event was organized by INPE and AMAZALERT WP2/WP6 members, aiming as an official launch of version 1.0 of the Brazilian Integrated Model of Land Surface Processes (INLAND). The model aggregates several modules of surface processes and represent the state of art in terms of land surface and vegetation dynamics modelling.

The event was aiming at selected Latin American young scientists in areas of environmental sciences, which had potential to improve research in biosphere-atmosphere interactions in South-America, using terrestrial land surface models.

The workshop was divided in four parts:

- 1) in the morning of 27/11 the INLAND model was officially launched, including presentations by specialists on different processes simulated by the model
- 2) group parallel sessions were held in the afternoon, with special dissemination of the different modules of the model and discussion plans for follow-up research ideas
- 3) in the morning of 28/11, the different groups continued in parallel sessions and reconvened in a plenary session to present results from parallel discussions.
- 4) In the afternoon of 28/11, a more detailed training session describing the source code of the INLAND model was performed, aiming at IT personnel.

Further information is presented in Portuguese) in

<http://cursos.cptec.inpe.br/workshop-inland/>

Caxiuana on the job training on ecophysiological measurements.

September 2012, Caxiuana, Brazil; 2 days (see figure 1.)

Organized by ALTERRA/EMBRAPA and focused on students and scientists from Para, Brazil.

In combination with a major field campaign of AMAZALERT, a 2-days training session on ecophysiological instrument usage was held. Students and interested members of Amazonian research institutions could attend lectures on:

- measuring CO₂ and light response curves in field conditions using a Licor6400 system.
- measuring leaf water potential using a Scholander pressure bomb.
- the use of Delta-T AP4 porometers to measure leaf transpiration and stomatal conductance
- using and programming a campbell datalogger
- measuring leaf temperature using thermocouples
- measuring leaf area index and leaf light environment using a LAI200 (Licor).
- data handling and quality checking
- analysing and interpretation of the data



Figure 1. Pictures of lectures on the special training session of AMAZALERT on ecophysiological instrument and methods of measurements.

XVII Brazilian Congress of Meteorology / side event

The Brazilian Congress of Meteorology is a bi-annual national scientific conference organized by the Brazilian Society of Meteorology. As part of its activities, several short courses and side round tables are usually organized with support of research projects and institutions. The main theme for the XVII edition, held in Gramado, RS, south of Brazil, from 23 to 28 september, 2012, was "uncertainties and challenges for planetary sustainability: the role of meteorological sciences". In this edition, a small round table involved scientists of AMAZALERT, who focused discussions on Biosphere-Atmosphere Interactions in Amazonia, with special emphasis on training of the use of the INLAND surface model.