



MarieCurie iLEAPS workshop

Current understanding of how integrated land ecosystem-atmosphere processes influence climate dynamics

17-21 November 2008, Hyères 'Le Continental', Hyères, France

Call for abstracts from young scientists and application for financial support

We are pleased to invite PhD students and researcher of all nationalities with less than 10 years of research experience to participate in this conference that will bring together scientists who study the surface-atmosphere exchanges of a range of compounds (e.g., water, energy, carbon, methane, BVOCs, dust, ...). The meeting will provide a forum to discuss the many ways land-surfaces can affect climate dynamics and atmospheric composition. Key gaps in our understanding and ways forward will be identified.



Background

In recent years the feedbacks between processes that take place between the land surface and the physical and chemical properties of the climate system have received increasing attention. Two widely known examples :

- the vegetation feedback on atmospheric CO₂ concentration (and hence climate) in fully coupled vegetation-carbon cycle-climate models ;
- the very large intermodel variability in the strength and positioning of the land-atmosphere hydrological coupling hot spots, reflecting the ongoing uncertainty in the proper way to represent the physical processes defining land-atmosphere coupling.

But there are more: interactions between methane sources, terrestrial productivity, BVOC emissions and the atmospheric sink strength for reduced carbon have been proposed to explain trends in glacial-interglacial atmospheric methane concentrations. Human perturbation of the land-cover may affect the physical part of the climate system, while human-induced perturbations of the nitrogen cycle affect emission of nitrogen oxides, and thus tropospheric chemistry and climate. Changes in fire regimes (either caused by climate change, or by human practice) greatly affect fire-related emissions but they also influence vegetation distribution, canopy structure, and type (and in that way emission of non-fire related emissions) and thereby feedback on climate. This list of examples could be extended much further.

To quantify these types of interactions in a changing environment, models of atmospheric (and oceanic) processes, vegetation and soil processes need to be more deeply coupled.

Objectives

The workshop contributes to the IGBP iLEAPS project and is supported by the European Commission via a Marie Curie workshops and conferences grant.

The objective of this workshop is three-fold :

1. **illustrate our present knowledge** on how land-surfaces influence climate variability and changes through their interactions with the atmosphere, at both regional and global scales ;

2. **illustrate our present knowledge** on the important feedbacks between the climate system and the land-surfaces ;
3. list the **missing processes / components that may induce important impacts and/or feedbacks, and that need to be explored** in the near future.

The workshop will be divided in four main sessions that we hope will be attended by all participants. At the end of each session we'll take enough time to address the question of 'missing processes / components' and steps to take ahead.

Session 1 : What role do land-surfaces play in the water and energy cycles ?

key words : land-use ; irrigation ; coupling with the atmosphere ; extreme events ; teleconnections ; past and future climate changes ; ...

Session 2 : How do ecosystems participate to the biogeochemical cycles ?

key words : wetlands and methane ; global carbon cycle ; land-use ; nitrogen cycle ; vegetation dynamics ; paleo-climates ; future climate changes in interactions with biogeochemical cycles ; ...

Session 3 : What are the feedbacks between land-surfaces, aerosols, dust and atmospheric composition ?

key words : biogenic emissions from land ; aerosols and cloudiness ; past and future climate changes ; methane and ozone chemistry ; ...

Session 4 : How can we properly evaluate our coupled land-atmosphere models ? How can we make a proper use of our models ?

key words : off-line versus off-line validation ; experimental protocols ; intercomparison studies ; detection / attribution of historical changes ; ...

Venue, participation & financial support

You will be encouraged to present new, unpublished or even incomplete results; abstracts will be made public at the iLEAPS website; full presentations will be made available after the conference only upon consent of speakers & poster presenters. Hyères is a small city located in southern France overlooking the Méditerranée (http://www.ville-hyeres.fr/version_anglaise/english.html). The closest international airport is Toulon-Hyères, the closest train station is Toulon or Hyères. The resort is located 17 kms from Toulon, 80 kms from Marseille and can be reached by bus or taxi.

The total number of participants including invited speakers and non-supported researchers will be limited to ca. 90. A key aspect will be to actively engage PhD students and post-docs, ***bursaries for the young scientists will be made available on a competitive basis***. They will cover the **workshop fee (350 €)**, accommodation and travel costs.

Essential criteria to apply for participation and financial support are

(i) You belong to one of the following groups:

- (1) Ph.D. student with less than 4 years research experience (=time since gaining your MSc degree or equivalent, which enabled you to pursue your doctoral studies)
- (2) Ph.D. or researchers with 4 to 10 years of research experience (as above, counted since the time you have gained your MSc degree or equivalent)
- (3) Ph.D. or researchers with more than 10 years of research experience (as above, counted since the time you have gained your MSc degree or equivalent) and a national of an EU state or associated state and currently working outside of the EU and associated states.

(ii) Your research seeks to understand how land-surfaces influence climate variability and climate changes through their interactions with the atmosphere, at both regional and global scales. You must clearly identify how your research either :

- (1) foster the use of the most up-to-date process-based models ;
- (2) or foster the developments of up-to-date data bases on land-cover changes including those induced by land-use ;
- (3) or identify potential new scenarios, that may help us better understand the mechanisms by which changes in land-cover and processes may further affect the dynamics of climate.

Application

The application form can be found at :

http://www.ileaps.org/index.php?option=com_content&task=blogcategory&id=78&Itemid=109

Camera ready abstracts should be limited to ca. 600 words and one optional Figure or Table, in total not exceeding one page. Selected participants will be asked to **provide a copy of their MSc degree (or equivalent)** to prove their eligibility under the criteria set by the European Commission. **Deadline for submission is Friday 12 September**, selected participants will be notified by **Friday 19 September**. Abstracts should be sent via email to nathalie.de-noblet@lsce.ipsl.fr.