



→ EARTH OBSERVATION FOR LAND-ATMOSPHERE INTERACTION SCIENCE

3-5 November 2010 | ESA ESRIN | Frascati (Rome), Italy



www.eo4landatmosphere.info

BACKGROUND

Land-atmosphere interactions include a variety of critical feedbacks among radiative, hydrological, and biogeochemical processes resulting in complex exchanges of energy and matter that influence the overall Earth system and its climate. The observation, understanding and prediction of such processes and their impacts have been hindered in the past by the lack of suitable data at the required spatial and time scales. In the last few years, Earth observation (EO) data integrated with in situ networks and within suitable models have demonstrated the potential to become a major tool for observing key variables and characterizing main processes governing land-atmosphere interactions at global to local scales.

In the next few years the capabilities of monitoring land surface and atmosphere will further improve by the increasing number of advanced EO missions to be launched by space agencies.

The full exploitation of such increasing multi-mission observational capacity requires harmonized research efforts involving both EO and Earth-system scientists, modellers, and institutions to develop novel observations and robust biophysical products to be effectively integrated with in situ data and within appropriate coupled models.

In this context, this conference aims at bringing together the EO and Earth-system communities, as well as scientific institutions and space agencies involved in the observation, characterisation and forecasting of land-atmosphere interactions and their impacts. In particular, the event represents a unique opportunity to facilitate the communications and scientific exchanges among these different communities in order to enhance the coordination of specific scientific efforts and advocate for a common view of major scientific needs and priority areas for the future.

THEMES

Contributions are invited for presentations on novel research activities and developments exploiting EO data in support of land-atmosphere interaction studies.

Areas of interest and related topics of major concern are listed in the following:

■ Current observational gaps and potentialities of novel EO missions in support to land-atmosphere studies;

■ Impact of land-atmosphere interactions on the climate system:

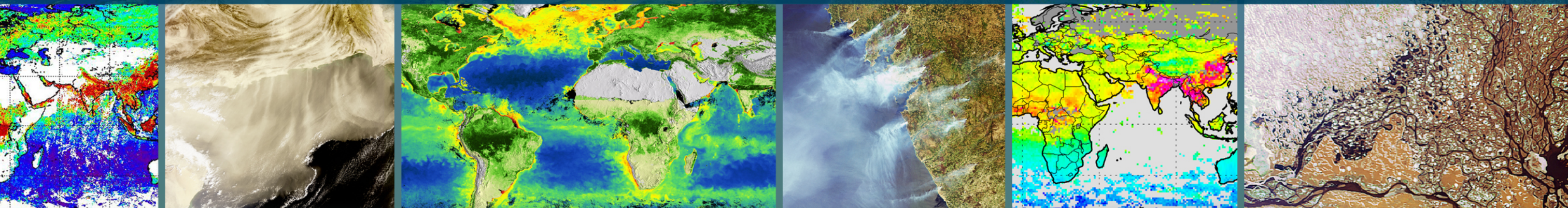
- Land-atmosphere radiative and heat fluxes;
- Assimilation of EO and in situ data into land-atmosphere coupled models;
- Integration of land-cover and atmospheric remote sensing with meteorology;

■ Characterization of vegetation-atmosphere dynamics:

- Impact of vegetation dynamics on the global carbon cycle;
- Advanced soil-vegetation-atmosphere models and quantification of CO₂ fluxes;
- Impact of anthropogenic land-cover changes (deforestation, forest degradation) on land-atmosphere processes;
- Shifts in northern and alpine tree lines and related changes in terrestrial biogeochemical cycles;

■ Characterization of biomass-burning emissions into the atmosphere:

- Fire-plume injection-height estimation and tracking;
- From burnt area and radiative power to pyrogenic emissions, atmospheric chemistry and transport;



OBJECTIVES

The specific objectives of the conference are:

- To increase the scientific understanding of main land-atmosphere interactions and their impacts on the Earth system and climate;
- To review the current advances in EO technology and its capacity to improve the characterisation of the complex land-atmosphere fluxes at different time and spatial scales;
- To accelerate the development of novel and robust multi-mission data products capable of exploiting the synergies of the increasing number of complementary EO missions;

- To foster the integration of EO data into advanced coupled models capable of describing and forecasting main land-atmosphere fluxes;
- To consolidate a scientific roadmap outlining priorities and scientific requirements to further advance in the development and exploitation of global observations and consistent data records capable of supporting the international scientific efforts of the iLEAPS community.

THEMES

■ Aerosols and non-CO₂ greenhouse/reactive gas fluxes:

- Assessment and forecasting of methane emissions from lakes, wetlands, melting permafrost and rice paddies;
- Aerosols characterization and discrimination between natural and anthropogenic species;
- Feedbacks between aerosol-cloud processes and land-atmosphere fluxes;
- Emission, transformation and deposition of non-CO₂ greenhouse and reactive gas exchanges.

ORGANISATION

- Oral and poster sessions will be organized around the above dedicated topics;
- Papers can be submitted both for oral and poster presentations;
- Conference proceedings will be published by ESA;
- A summary reporting main findings and recommendations from each session will be provided and discussed in a final plenary session;
- The official language of the Symposium is English;
- No participation/registration fee will be charged;
- Participants are expected to finance their own travel and accommodation expenses.

SPECIAL ISSUE

It is under consideration the possibility of publishing a special issue of a peer-reviewed journal dedicated to the event.

To this end, after the conference, a selected number of papers will be invited to submit an extended version for peer review and potential consideration for the special issue.

ABSTRACT SUBMISSION AND REGISTRATION

For abstract submission (max 5000 characters) and registration, visit: www.eo4landatmosphere.info (or www.congrex.nl/10c13)

DEADLINES

Call for Abstracts	17 February 2010
Abstract Submission	31 May 2010
Notification of Acceptance and Preliminary Programme	19 July 2010
Registration and Accommodation	1 September 2010
Paper Submission and Symposium	3-5 November 2010

ORGANISING COMMITTEE

- **Diego Fernández Prieto** (ESA)
- **Anni Reissell** (iLEAPS International Project Office)
- **Mattia Marconcini** (ESA)
- **Michael Ellis** (EGU - BGS, UK)

INTERNATIONAL SCIENTIFIC COMMITTEE

- **Meinart O. Andreae** (MPI for Chemistry, Germany)
- **Simon Pinnock** (ESA)
- **Almut Arneeth** (Lund University, Sweden)
- **Bernard Pinty** (JRC)
- **Paulo Artaxo** (University of São Paulo, Brazil)
- **Stephen Plummer** (ESA)
- **Isabelle Bey** (ETH, Switzerland)
- **Catherine Prigent** (CNRS, Observatoire de Paris, France)
- **Torben Christensen** (Lund University, Sweden)
- **Shaun Quegan** (University of Sheffield, UK)
- **Emilio Chuvieco** (University of Alcalá, Spain)
- **Markus Reichstein** (MPI for Biogeochemistry, Germany)
- **Pierre Friedlingstein** (LSCE, France)
- **Nobuko Saigusa** (NIES, Japan)
- **Laurens Ganzeveld** (Wageningen University, The Netherlands)
- **Sonia Seneviratne** (ETH, Switzerland)
- **Alex Guenther** (NCAR, USA)
- **Kirsten Thonicke** (PIK, Germany)
- **Sander Howeling** (SRON-IMAU, The Netherlands)
- **Guido Van Der Werf** (Vrije University, The Netherlands)
- **Paul Ingmann** (ESA)
- **Mathew Williams** (University of Edinburgh, UK)
- **Peter North** (University of Wales Swansea, UK)
- **Martin Wooster** (King's College London, UK)
- **Paul Palmer** (University of Edinburgh, UK)
- **Claus Zehner** (ESA)