

## Background

African Monsoon Multidisciplinary Analyses (AMMA) is an international project to improve our knowledge of the West African monsoon (WAM) and of its variability. AMMA is motivated both by fundamental scientific questions (process and scale interactions) and societal needs. These needs are related to the WAM variability strongly impacting key living issues for the West African population (water resources, food security, health).

Scientists from 29 countries, representing more than 140 national and pan-national agencies, are involved in AMMA. In addition to the international structure which has been set up, a network of African scientists linked to AMMA has been established (AMMANET) which helps to consolidate existing collaborations in Africa and to federate initiatives through a pan-African partnership.

AMMA is endorsed by the World Climate Research Programme (WCRP) and continues to develop in association with CLIVAR and GEWEX. AMMA has also been endorsed by two projects within the International Geosphere-Biosphere Programme (IGBP): IGAC and ILEAPS. AMMA is working with other international projects and programmes to achieve its aims including GCOS, GOOS and THORPEX.

## Conference Objectives

The conference aims to bring together researchers from around the world working on the WAM and its impacts, to review ongoing research and modelling activities and to discuss ongoing and future contributions to the AMMA research programme. It also provides an ideal opportunity for consolidating and establishing collaborations at the international level, in particular with African scientists.

Substantial effort will be made to ensure good attendance at the conference, particularly from African and young scientists.

The conference will take place within the enhanced observing period (EOP) and one year after the AMMA special observing period (SOP) in 2006. The conference will provide an ideal opportunity to present first results, to review and discuss the ongoing process studies and related research activities like the ongoing field measurements in West Africa. A strong emphasis will be put on the interface between geophysical and impact studies.

## Conference Themes

Recognising the societal need to develop strategies that reduce the socioeconomic impacts of the variability of the WAM, AMMA facilitates the multidisciplinary research required to provide improved predictions of the WAM and its impacts. This is achieved and coordinated through five international working groups and two cross-cutting activities: (i) West African monsoon and global climate including aerosols and chemistry, (ii) Water cycle, (iii) Surface - Atmosphere feedbacks, (iv) Prediction of climate impacts, (v) High impact weather prediction and predictability, (vi) Climate modelling (evaluation and improvement) and (vii) Long Term Observations (Ground measurements and satellite products) (for more information see <http://amma-international.org/science/index>). The main conference themes reflect the main research areas and are briefly described here:

### ⇒ **West African Monsoon including aerosols, chemistry and ocean**

The two-way interactions between the West African Monsoon (WAM) and the rest of the globe are important for determining the variability of the WAM and its global impacts on intraseasonal-to-decadal time-scales. This requires an understanding of the WAM processes, including mechanisms (e.g. physical, chemical and dynamical) at the regional scale.

Research areas under this theme include (i) Variability and predictability of the WAM (nature and role of teleconnections, intraseasonal variability including easterly waves, predictability issues and the role of the ocean, detection of the global change), (ii) Monsoon processes (scale interactions, the seasonal cycle and the monsoon onset, emissions of trace gases and aerosols, their transport and transformation), and (iii) Global impacts of the WAM (e.g. on tropical cyclones, aerosol variability, atmospheric chemistry).

**Coordinators: B. Bourles, S. Janicot, J. Pelon, C. Reeves, B. Vogel**

### ⇒ **Water cycle and surface-atmosphere feedbacks**

Understanding the global water cycle and its change due to natural and anthropogenic factors is of critical importance as the availability of water is one of the most limiting parameters for life, agriculture and economic development, especially in the Sahel. A better understanding of the water cycle in the coupled oceanic, atmospheric and continental system will be beneficial for weather and climate forecasting and the management of impacts. It is thus a major issue for AMMA.

Topics under this theme include (i) Analysing the water budgets at regional scale and mesoscale; ii) Investigating how best to combine the various sources of measurements to compute these budgets, depending on the scale of interest; and iii) Studying the processes generating feedbacks in the water cycle, which control the impact of oceanic, atmospheric or continental perturbations on water availability.

This latter topic is of particular interest since models suggest that West Africa is a “hot-spot” of land-atmosphere interaction. However, the chain of processes causing these strong interactions is poorly understood, and not well represented in models. The conference will provide the opportunity to present new studies which explore the coupling at a regional and mesoscale in relation to the water cycle.

**Coordinators: A. Gaye, T. Lebel, J.L. Redelsperger, C. Taylor**

### ⇒ **Climate impacts**

A major aim of AMMA is to develop the underpinning science that supports the practical use of climate information in improving health, water resources, food security/agriculture and other key climate-sensitive sectors in West African countries by, for example, helping to identify the relevant climate/environment monitoring, prediction and adaptation strategies. AMMA ensures strong linkages between the work taking place on impacts and that taking place on observed variability and predictability of the WAM.

**Coordinators: B. Fontaine, H. Karambiri, A. Morse, I. Sandholt**

### ⇒ **Forecasting at all scales and its applications**

We are hindered in producing skilful predictions in the West African region due to a combination of gaps in our knowledge, gaps in the operational observing system and problems in the way models handle the key scale interactions that characterize the coupled West African monsoon system. These problems are shared by both the “weather

prediction community” and the “climate change projection community”. Due to the underlying dynamical processes and to their interaction with vegetation, ocean and chemistry, the WAM region is an ideal area for testing the skill of weather to climate “forecasting” systems, for understanding how much can be achieved through parameterizations or how much we need to consider the use of cloud resolving models for checking tailored forecast products.

Research topics under this theme include: (i) The skill of current seasonal to decadal ensemble predictions, sensitivity to the interaction with extra tropics and other tropical areas; (ii) Data assimilation, modelling and targeted measurement strategies to improve the prediction of weather and climate; (iii) Auditing of climate models (global and regional) in order to assess their degree of self-consistency and realism in present climate (20th century) and scenarios (21st century); (iv) Weather and climate forecast products: reliability and effectiveness; (v) High impact weather over Africa and downstream: process and predictability studies.

**Coordinators: E. Afiesimama, P. Ruti, C. Thorncroft, Y. Xue**

## Joint Meetings

Jointly with the 2<sup>nd</sup> International AMMA Conference, two meetings will take place:

The **AMMA-Ocean / TACE / PIRATA meeting** will be held between 27<sup>th</sup> and 30<sup>th</sup> of November, 2007. This meeting will focus on ocean studies particularly discussing the role of the Tropical Atlantic Ocean in the climate system. Four afternoon sessions will address the following topics: (i) Atlantic ITCZ and Tropical Atlantic Variability (TAV); (ii) Air-sea coupling, sea surface temperature and ocean mixed layer heat budget; (iii) Prediction and predictability of TAV; (iv) Tropical ocean circulation. The morning sessions will be dedicated to special topics like the status and development of the observation system in the tropical Atlantic.

**Coordinators: B. Bourles, P. Brandt, C. Eden, M. Jochum, B. Johns, N. Keenlyside**

The **2nd THORPEX Africa Planning meeting** will be held just before the conference 23<sup>rd</sup> and 24<sup>th</sup> of November 2007 at the **University of Karlsruhe**. The meeting will focus on finalising the draft THORPEX Plan for Africa and agreeing the priority implementation topics as well as the structure to oversee implementation of the Plan.

**Coordinators: J. Caughey, S. Jones, A. Kamga**

## Undefined acronyms used

AMMANET	AMMA network of African scientists
CLIVAR	Climate Variability and Predictability
GCOS	Global Climate Observing System
GEWEX	Global Energy and Water Cycle Experiment
GOOS	Global Ocean Observing System
IGAC	International Global Atmospheric Chemistry
ILEAPS	Integrated Land Ecosystem – Atmosphere Processes Study
PIRATA	Pilot Research Moored Array in the Atlantic
TACE	Tropical Atlantic Climate Experiment
THORPEX	The Observing System Research and Predictability Experiment

## Scheduled programme

The programme will include a mixture of plenary sessions, parallel working sessions and poster sessions. The plenary sessions will include invited and contributed oral presentations.

The parallel sessions are designed to favour discussions between processes and integrative science in AMMA as well as to coordinate and promote international collaboration. A brief schedule of the expected programme is included below; a more detailed version of this will be available on the conference web page.

Mo, 26.11.	Tu, 27.11.	We, 28.11.	Th, 29.11.	Fr, 30.11.
○	○	○	○	4 //
4 //	4 //	4 //	4 //	○
■	■	■	■	
Get together Cocktail			Gala dinner	

○: Plenary Session; //: Parallel working session; ■: Poster session

**Plenary sessions** will cover the main conference themes given above after a general introduction to AMMA and invited talks on the state of the art of the West African Monsoon.

**Parallel and Poster sessions** will cover processes (e.g. atmospheric boundary layer, convection and dynamics; oceanic and land-surface processes; chemistry and aerosols processes and interactions with dynamics), integrative science (regional and global modelling; simulations for the 20th & 21st centuries; high impact weather prediction and predictability; reanalysis and data impact studies) as well impacts (prediction of climate impacts, land productivity and water resources; human processes, adaptation and environmental interactions; health).

## Languages

English and French are the conference languages: simultaneous translation will be provided during plenary sessions.

## Deadlines

Abstract submission: until 15<sup>th</sup> of August 2007

Session organization: beginning of September 2007

Letter of acceptance: before 15<sup>th</sup> of September 2007

Registration to conference: 15<sup>th</sup> September to 31<sup>st</sup> October 2007

## Overall committee

C. Kottmeier (co-Chair), J.L. Redelsperger (co-Chair), A. Diedhiou, A. Gaye, T. Lebel, D. J. Parker, J. Polcher, C. Thorncroft

## Scientific committee

E. Afiesimama, B. Bourles, P. Brandt, B. Fontaine, A. Gaye, S. Janicot, S. Jones, A. Kamga, H. Karambiri, T. Lebel, A. Morse, J. Pelon, J.L. Redelsperger (Chair), C. Reeves, P. Ruti, I. Sandholt, C. Taylor, C. Thorncroft, B. Vogel, Y. Xue, with the help of E. vd Akker

## Organisation committee

E. vd Akker, N. Kalthoff, M. Kohler, C. Kottmeier with the help of the AMMA Project Office (K. Ginoux and C. Kane) and the secretariat of IMK and FZK

## Call for papers: starting end of June 2007

Please submit your abstract online in English or French

before **15<sup>th</sup> of August 2007**

on the conference web page under

[http://amma-international.org/coll\\_2confint/index.en.php](http://amma-international.org/coll_2confint/index.en.php)

(max 400 words each, details concerning specification and format are on the webpage).

## Registration

The online conference registration will be opened in September 2007. A registration fee will be charged to cover the conference expenditures. Details on the fees (amount and payment methods) will be provided on the conference web page.

## Meeting place

**Forschungszentrum Karlsruhe**, FZK, Germany

The FZK is located at Karlsruhe-Leopoldshafen, about 12 km outside of Karlsruhe. France is only minutes away by car, and Switzerland can be reached in just a couple of hours. Located on the foot of Black Forest in the Rhine Valley, the former residence of the Margraves has extraordinary transport connections for which it is envied by many other cities in the region. Karlsruhe is located directly at the Rhine River and is surrounded by the cities of Mannheim in the north, Stuttgart in the east and Strasbourg in the southwest.

## Hotel accommodation

In Karlsruhe, hotels are reserved for the 2<sup>nd</sup> International AMMA Conference. Details are on the conference web page.

## Further information and contacts

*AMMA International Project Office*

Contact : Dr. Elisabeth van den AKKER [karlsruhe2007@amma-int.org](mailto:karlsruhe2007@amma-int.org).

*Local contact in Karlsruhe, Germany:*

Contact: Dr. Norbert KALTHOFF [Norbert.Kalthoff@imk.fzk.de](mailto:Norbert.Kalthoff@imk.fzk.de)

*Conference web page*

<http://science.amma-international.org/meetings/internationalConferences/karlsruhe2007>

## Acknowledgment and conference sponsoring

Based on a French initiative, AMMA was built by an international scientific group and is currently funded by a large number of agencies, especially from France, UK, US and Africa. It has been the beneficiary of a major financial contribution from the European Community's Sixth Framework Research Programme. Detailed information on scientific coordination and funding is available on the AMMA International web site <http://www.amma-international.org>

All agencies supporting the conference by direct or indirect sponsoring are listed on the conference web page.

Edited: 29<sup>th</sup> of June 2007

## African Monsoon Multidisciplinary Analyses

### 2<sup>nd</sup> International Conference

Jointly with the

### AMMA-Ocean / TACE / PIRATA meeting

Karlsruhe, 26<sup>th</sup> – 30<sup>th</sup> November 2007



## Second Announcement and Call for Papers



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