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The purpose of the International AMMA newsletters is to keep the international research community interested in AMMA well-informed of how the AMMA project is progressing, through highlighting important activities, meetings and research opportunities.

These letters are available on the AMMA-International website:

<http://www.amma-international.org/news/internationalNewsletter/index> .

Due to the ongoing SOP-period asking all efforts of the contributing authors, the publication of the bimonthly newsletter is delayed. We apologize for any inconvenience this may cause.

Highlights of this newsletter:

1. SOP1 Report (May - June 2006)

The atmospheric, oceanic and continental components of SOP1 (May – June) were very successful in term of instrument coverage and operation status. The Sahel suffered very dry conditions during this period. (more page 3)

2. The 2006 Radio-sounding campaign and the first RS IOP (20-29 June)

The background SOP year RS program has been scheduled to begin in April 2006 with 7 stations performing 4 soundings per day till the end of September (more page 4)

3. The Oceanic cruises in June (Research vessels Atalante, Meteor, Ron Brown)

The EGEE 3 cruise has been carried out from Cotonou (Benin), from May 26 to July 5 onboard the French R/V ATALANTE, with a two days call in June 17-18. (more page 5)

4. SOP2_a1: seasonally evolving surface conditions, low-level thermodynamic contrasts and associated regional circulations

After the successful SOP1 campaign, the seasonally evolving surface conditions, low-level thermodynamic contrasts and associated regional circulations will continue to be observed during SOP-2. (more page 6)

5. Training of African forecasters and ensuring meteorological forecasting during SOP1 and SOP2_a1

Before the beginning of the SOPs, a workshop was held from May 22 to June 2, to train 18 African forecasters (more page 7)

6. Miscellaneous on SOP operations and related events

Press travel and the official opening of SOP2 in Niamey 10th of July 2006
AOC News (more page 8)

7. Launch of CALIPSO and CLOUDSAT

The Cloud Aerosol Lidar and Infrared Pathfinder Satellite Observation (CALIPSO) - <http://www.calipso.larc.nasa.gov/> was launched on April 28, 2006 (more page 8)

8. AMMA Implementation Plan version 3.0

Since the end of May 2006, the International Implementation Plan of AMMA is available (more page 9)



9. AMMA data base – data policy and access

AMMA aims to study in collaboration with African scientists the monsoon system from its geophysical aspects to its socio-economic impacts. (more page 9)

10. Availability of SAF Land products for AMMA users

The AMMA community has expressed strongly its needs in radiative parameters derived from MSG data and generated by SAF Land at Institute of Meteorology of Portugal. (more page 9)

11. AMMA-Africa : Workshop in Ouagadougou

A CSAM meeting was held in Ouagadougou in May to update the PIAF (more page 10)

12. AMMA-US: 2-day workshop in Washington, May 2006

The workshop attracted more than 80 people indicating the enthusiasm that exists in the US to contribute to AMMA. The major outcome of the workshop (more page 10).

13. AMMA-EU and AMMA France meeting on Land-surface processes, May 2006

Representing four different work packages in the AMMA-EU, 23 AMMA-EU scientists from five countries met for three days in Garmisch-Partenkirchen (more page 10).

14. AMMA-EU Topping-up call

In the framework of the specific call opened by the EC to integrate Targeted Third Countries (TTC) in existing projects, an extension of AMMA-EU partnership has been submitted the 16th of May. (more page 10).

15. SOP Meeting: debriefing and preliminary results, November 2006

Status report about structure / organization (more page 10)

16. AMMA International conference of Dakar: Book and CD

Last not least the Dakar conference book reached its finishing touch! It was a tremendous work to get the multitude of files, coming from all over the world and produced with different software, edited in English and French. (more page 11).

Used acronyms

Meetings

Meetings coming up

6th to 11th November 2006: SOP meeting in France (see item X , this newsletter)

Past meetings

4th to 6th April 2006: TT8 meeting (debriefing SOP0, preparation SOP1 & 2) in Leeds, UK

7th April 2006: ICIG meeting in Leeds, UK

4th and 5th May 2006: AMMA US: 2-day workshop in Washington, US.

10th to 12th May 2006: AMMA Africa: 3-day workshop of CSAM in Ouagadougou, Burkina-Faso.

10th to 12th May 2006: AMMA EU & AMMA France meeting on Land-surface processes, Garmisch-Partenkirchen, Germany.

The AMMA Newsletter is published under the responsibility of the Executive Committee of the International Scientific Steering Committee:

J. -L. REDELSPERGER, C. THORNCROFT, A. DIEDHIOU, T. LEBEL, D. PARKER and J. POLCHER



1. SOP1 Report (May - June)

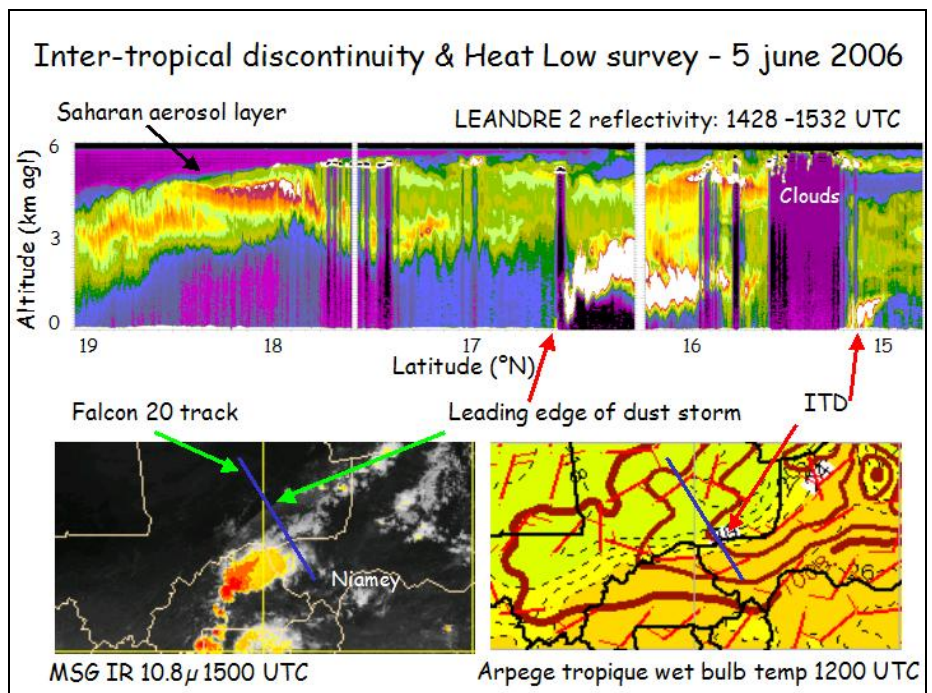
The focus of SOP-1 was on providing the necessary observations required to support analysis and understanding of the seasonal evolution of the low-level thermodynamic contrasts along the climate transect (including the Gulf of Guinea), their relationship with regional circulations (e.g. jets and direct circulations) and atmospheric and continental water budgets (at local to regional scale). Surface energy budgets over land and ocean are required to support this analysis including how these are impacted by evolution of the land surface (vegetation, soil moisture) and the ocean (mixed layer).

Special observations are required to support this analysis in addition to those provided by the EOP: (i) observations of the atmospheric boundary layer thermodynamic variables and winds over land and ocean by aircraft and boundary layer drifting balloons (in addition to radiosoundings and surface flux measurements provided by the EOP) (ii) high resolution observations of the ocean mixed layer and atmospheric boundary layer from two ships cruising in the Gulf of Guinea and the Tropical Atlantic deploying additional moored buoys and drifters; (iii) in parallel with the evaluation of the energy budgets, measurements of the concentrations and fluxes of trace gases and aerosols at the surface (including emission and deposition) and in the atmosphere will be made, and compared with the results before and after the arrival of the monsoon flow

Some SOP ground instruments have been in place since the beginning of 2006, other operated during SOP0 and were re-activated for SOP1, and the last set of instruments were installed in May. The SOP1 aircraft campaign lasted from 1st June to 15th June, with the two French aircraft (Falcon 20 F-GBTM et ATR42 F-HMTO). The first leg of the EGEE campaign started from Cotonou 26th of May and ended 15th of June. Web links to different web pages providing information about the instrument deployment, SOP reports, log books, quicklooks etc. can be found under <http://www.amma-international.org/implementation/AOC/index>. Under <http://www.amma-international.org/implementation/instruments/SOP/SOPinstruments.pdf> is a list of most of the SOP-instruments and platforms and their deployment period(s).

Dry climatic conditions were observed throughout May and June over the whole Sahel and also over the Ouémé catchment. The atmospheric, oceanic and continental components of SOP1 were very successful in term of instrument coverage and operation status. Most PIs reported an almost 100% operating time for their instrument. The MIT and the Ronsard C-Band Doppler radars started to operate after 15th June. The XPORT and UHF radar – deployed in the Ouémé catchment – also suffered some technical problems, so gaps are expected. The aerosol campaign in Niger was well coordinated with several aircraft ATR42 flights over the region of Banizoumbou.

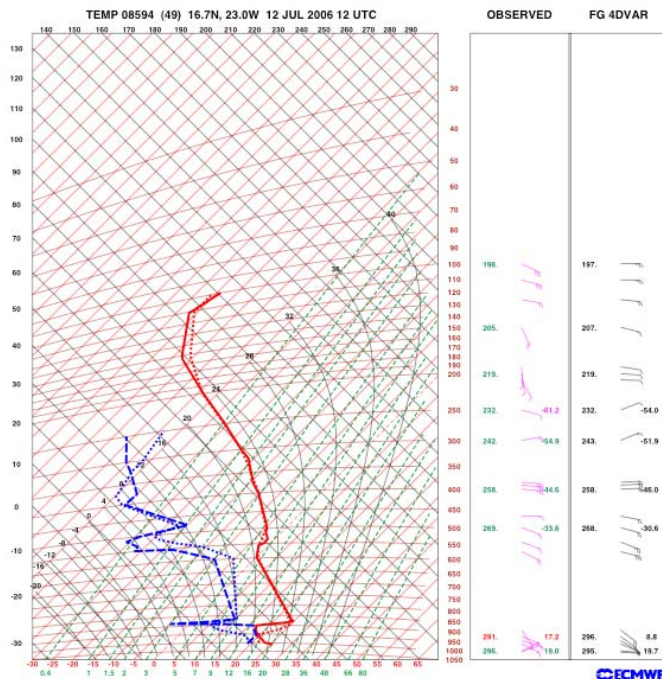
Several interesting ITD/HEAT Low flights were made by the Falcon equipped with the Lidar *Léandre 2*, once in conjunction with the ATR. A combined Niamey-Cotonou transect was made by both aircraft on 13 - 14 June, with an oceanic flight reaching to the Atalante Research Vessel (EGEE campaign, see below, section 3) at 2°N.



LEANDRE 2 reflectivity measured along the Falcon 20 track on 5 June 2006 between 0 and 6 km agl. Large reflectivity values observed (appearing in white) between 16 and 16.5°N correspond to an aerosol uptake most likely forced by the gravity current ahead of storm visible in the MSG IR imagery at 1500 UTC over northern Burkina-Faso. The leading edge of the dust storm was located over Mali and is visible on the IR imagery. To the south, the ITD could also be identified by large reflectivity values (appearing in white) around 15.2°N, as forecasted by Arpege Tropique. The Saharan aerosol layer (SAL) appears in a spectrum of colors ranging from green to yellow to orange. North of the dust storm, the aerosol-laden SAL can be observed to be decoupled from the cleaner developing planetary boundary layer (blue). Finally, many clouds were observed on that day above 5 km agl (appearing in white) that can also be seen on the MSG IR imagery.



2. The 2006 Radio-sounding campaign and the first RS IOP (20-29 June).



The background SOP year RS program has been scheduled to begin in April 2006 with 7 stations performing 4 soundings per day till the end of September : Abuja, Agadez, Cotonou (sounding of 12 July, 12:00 UTC shown here on the left), Niamey, Parakou, Tamale and Tamanrasset. A 4 RS/day program was also considered for Ouagadougou and Tombouctou, even though at a lesser degree of priority as compared to the first 7 stations. For 6 other stations the objective was to perform two soundings per day (Abidjan, Bamako, Bangui, Dakar, Douala, N'Djamena). For a last set of 6 stations the objective was one sounding per day at 12:00 UTC (Ngaoundere, Nouadhibou, Nouakchott, Sal, Tambacounda and Tessalit); note however that only Sal and Tessalit are considered as Priority-1 stations for AMMA. In addition to these 21 stations (17 in priority 1), Conakry is considered as very important to document the monsoon influx into the continent, but a funding scheme has yet to be found to restore the equipment there. Due to several causes of delay – the first was the late delivery

of the first part of the AMMA-EU RS budget and the second was the very high number of actions to be carried out – the SOP coverage agenda had to be revised, with only a few stations operating nominally on April 1st. It should be noted however that, thanks to the availability of the European funds, a very huge upgrading of the West and Central Africa RS network has been performed and that this network is now operating at a level not known since the GATE Experiment in 1974 and WAMEX in 1979.

The most important achievements of the AMMA RS program are:

- The upgrade of Vaisala systems from RS80 to RS92 and the replacement of Star systems by MODEM sondes
- A huge increased stock of consumables (sondes, balloons, gaz charges);
- The Improvement of the telecommunication network (renovation of the regional transmission system and installation of DCP systems)
- 4 new stations (Cotonou, Parakou, Tamale, Abuja), and repairing of Abidjan
- Enhanced density of data for the assimilation system from 27% of the SOP objectives in April to 53% during the first part of June.

These actions have been carried out mostly through ASECNA in the framework of the AMMA Task Team #1. However a significant number of issues are still to be solved due to local difficulties (for instance real-time transmission of data through the installation of DCP on 4 stations, upgrade of stations in Mali, re-functioning of Abidjan, difficulties with the new balloons provider of ASECNA,..). In order to accelerate the process ASECNA will provide additional human resources to the project, one employee being selected to help J.B. Ngamini.

In addition to the enhancement of soundings during the SOP, two IOP sequences of 8 soundings per day were scheduled at the stations of Cotonou, Parakou, Niamey, Agadez, Tamale and Abuja; IOP5.1 was carried out from 20 to 29 June and IOP5.2 will take place from 1 to 15 August. IOP5.1 was a great success, thanks to the commitment of the operators on the six stations. Young European and African scientists helped these operators. All the soundings have been launched except two at Abuja which burst early due to thunderstorms.

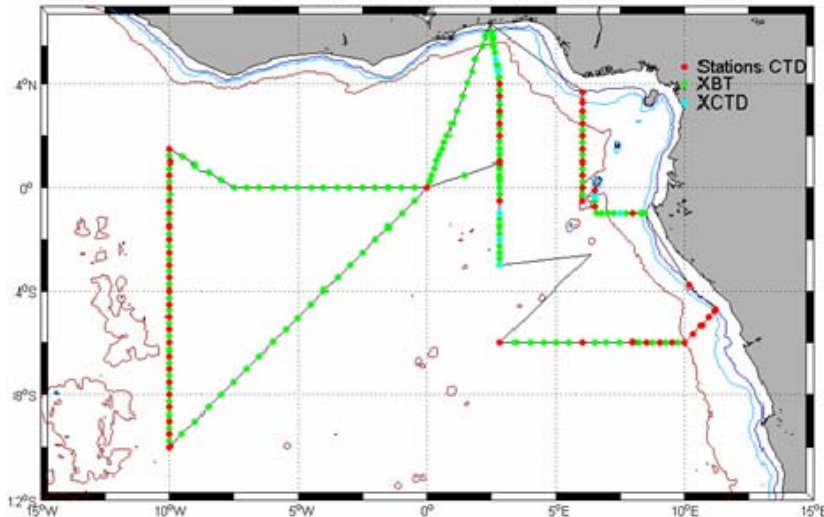
In addition to this program, the various research vessels (Atalante, Ron Brown, Meteor) also launched soundings in June (up to 4 soundings by day) which were also assimilated by the weather prediction centers.

A status of the TEMP messages received at the European Center is produced daily since January and available to the web address: <http://www.ecmwf.int/amma/d/ammatab>. The European Center also provide tephigrams at the address: <http://www.ecmwf.int/products/forecasts/d/charts/monitoring/amma/tephigrams/>.



3. The Oceanic cruises in June (Research vessels Atalante, Meteor, Ron Brown).

The EGEE 3 cruise has been carried out from Cotonou (Benin), from May 26 to July 5 onboard the French R/V ATALANTE, with a two days call in June 17-18. The main goals of this cruise were to obtain measurements of most of the oceanic and atmospheric parameters over the whole Gulf of Guinea in order to assess the monsoon onset initial conditions in this area and to document the processes that drive the air-sea exchanges. A large amount of measurements have been acquired on many atmospheric and oceanic parameters, some of them at high acquisition frequency. Some measurements were obtained continuously during the cruise – e.g. meteorological parameters, surface fluxes, sea surface temperature, salinity and horizontal



CTD (red dots), XBT (green) and XCTD (blue) profiles carried out during EGEE-3. Over 250 temperature profiles were made in the ocean upper layers

velocity of currents from the surface down to 500m depth – and others during stations – 72 hydrological and current profiles have been done when the vessel stopped, during which thousands of sea water samples were collected for some parameters analyses. Furthermore, 101 atmospheric radiosoundings (at least twice a day) and 180 oceanic temperature profiles have been made thanks to expendable bathythermographs (XBT; including 17 ones with associated salinity profiles -XCTD-) and several deployments of profilers, drifters and moorings were also

carried out. In addition, 5 meteorological ATLAS moorings (of the PIRATA program, see web site: <http://www.brest.ird.fr/pirata/piratafr.html>) have been either replaced or deployed, 12 drifting temperature profilers (Marisonde), 12 deep drifting profilers (PROVOR) and 13 surface drifters (SVP) have been launched. 6 long duration stations (24 hours) have been carried out (five close to the PIRATA ATLAS buoys and one south of a meteorological station located at São Tomé) in order to assess the diurnal cycle of air-sea turbulent fluxes. The French research aircraft explored the atmospheric environment in the area of the cruise on two occasions (June 13 and July 4) along 2°50'E south of Benin simultaneously with the vessel. 30 scientists (25) of different countries and institutions participated to the 1st (2nd) leg of the cruise, including 9 invited African colleagues (from Senegal, Ivory Coast, Ghana, Togo, Benin, Nigeria and Congo).

Two other cruises were carried out almost simultaneously in the Western and Centre parts of the Tropical Atlantic, the first one by the US R/V RON BROWN and the second one by the German R/V METEOR, both partly in the framework of AMMA. These cruises allowed to get additional atmospheric and oceanic measurements and to ensure other mooring deployments (in particular two new ATLAS buoys off West Africa), very useful for the AMMA SOP experiment. Thanks to these three simultaneous cruises, either oceanic (CTD and XBT) or atmospheric (radiosoundings) profiles were acquired and transmitted in real (or quasi-real) time during the monsoon onset over the whole tropical Atlantic basin. Furthermore the moorings, profilers and drifters deployed in the tropical Atlantic during these cruises will allow the acquisition and transmission of in situ data all along the AMMA SOP. Especially worth noting is the fact that RS data from the ships were assimilated by the weather forecast centres.

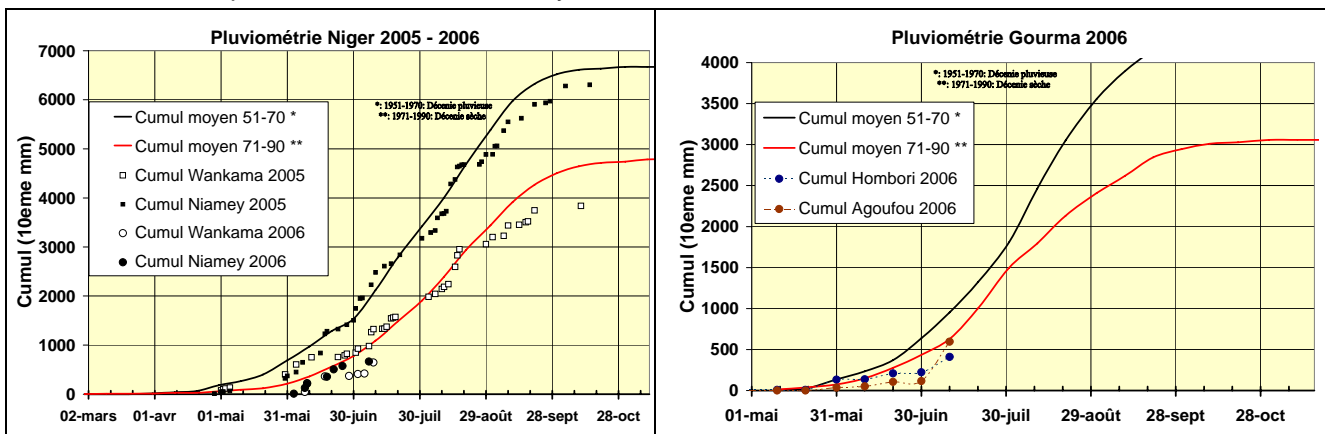
With most of their objectives achieved, we can conclude that all the works carried out, in a very collaborative spirit, during the three (French, US and German) cruises constitute a very successful experiment in the framework of the AMMA program.



4. SOP2_a1: seasonally evolving surface conditions, low-level thermodynamic contrasts and associated regional circulations

After the successful SOP1 campaign, the seasonally evolving surface conditions, low-level thermodynamic contrasts and associated regional circulations will continue to be observed during SOP-2. In addition to this, SOP-2 has key objectives concerned with supporting the multi-scale analysis of the WAM. A major objective of SOP-2 is to provide the observations needed to support mass, momentum and water budgets at the mesoscale (~100km). The SOP-2 is also the key period to focus on the multiple scale interactions between the surface conditions, synoptic environment and propagating MCSs including the role played by microphysics on convection and how this is impacted by aerosol. The role of the MCSs and monsoon on aerosol and trace gas mobilisation and transport will be specifically investigated.

SOP2_a1 was the first aircraft period of SOP2, lasting from 1st July to 15th July. The general meteorological situation has been characterized by an unusual long lasting weak convective regime. This period corresponded to the monsoon onset – the that is the transition between the end of the first rainy season along the Guinean Coast and the beginning of the monsoon regime over the Sahel ; this transition period lasted longer than usual and at the end of SOP2_a1, the monsoon convective regime has not yet been established. At the regional scale the low-levels monsoon flow has evolved progressively and the moisture and the south-westerly monsoon winds have been present over the Sahelian latitudes during most of SOP2_a1, with the ITD well-positioned between 15°N and 20°N. However organized convection has not developed in a significant way and mostly isolated convection structures of diurnal evolution have occurred over Niger. Some well-organized cloud clusters have been observed either over Central Africa, Nigeria, Burkina or more westward in the surrounding of Fouta-Djalou. The AEJ has not been very active preventing high vertical wind shear favourable to MCS development and the TEJ has been most of the time located over Central Africa. At the global scale a Madden-Julian Oscillation event occurred over the Indian and West Pacific basins at the end of June which has induced a slowly eastward propagating large-scale subsiding forcing area over the East Pacific to the Tropical Africa, which has finally left the Africa area at the end of the SOP2_a1.

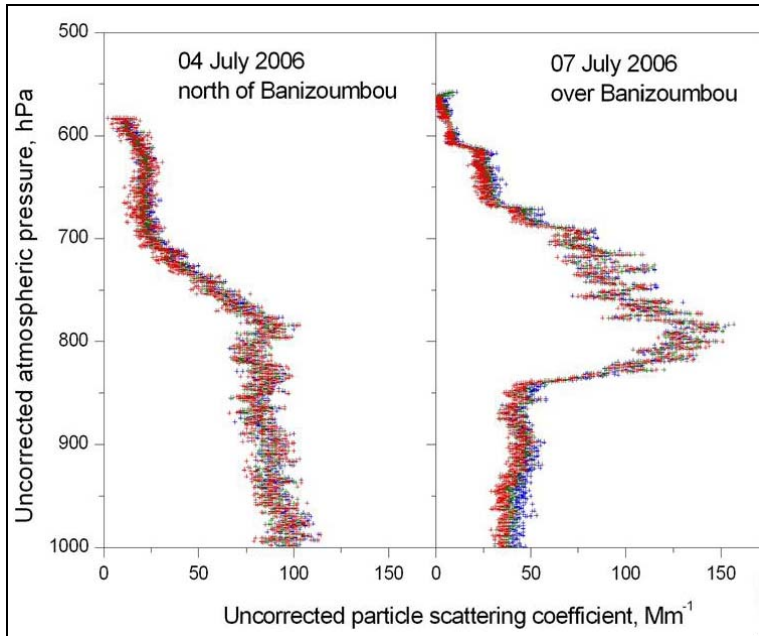


On the Niger meso site, the start of the 2006 rainy season displays a large deficit of rain, with less than 80 mm at the tow test stations (10th July), against 100 mm for the average of dry years and 250 mm for the average of wet years

On the Gourma meso site, the start of the 2006 rainy season is also in deficit; however the first decade of July had excess rainfall, which contributed to reduce somewhat the deficit observed in June. This was not the case for the Niamey site.

As for SOP1, the coordination was based on i) the forecast team built up by Meteo-France involving ACMAD, ii) the AOC in charge of the relationships between partners and logistic, administrative and financial supports, iii) the scientific secretariat involving two persons from IPSL plus one from Meteo-France working with the forecast team. There were many interactions between the flights and the forecast teams through meteorological bulletins adapted to the flights plans and many discussions at ACMAD before the scheduled flights. The scientific secretariat was in charge of the instruments reporting communicating with the main ground sites through e-mails, phone calls and SMS. Some difficulties have been encountered in the network facilities during the beginning of the SOP2_a1 and have been quickly solved by the Telecom team from Meteo-France.

In term of instrument deployment one major addition of SOP2_a1 was the participation – from Niamey – of the German Falcon D-CMET equipped with the Lidar *WIND*. The major ground instruments that were not ready for SOP1 (MIT radar, Ronsard, lightning detectors) and those which had technical problems (XPORT, UHF) were operational throughout SOP2_a1.



Aerosol scattering coefficient measured during SOP2_a1 in the proximity or directly above the Banizoumbou ground-based supersite at 450 (blue crosses), 550 (green crosses), and 700 nm (red crosses) by the nephelometer of the AVIRAD aerosol sampling system onboard the F-ATR42. Two examples are chosen to illustrate that in the wet season the aerosol load over Niger is dominated by mineral dust (which can be seen by the fact that there is no spectral dependence in the aerosol scattering coefficients measured at different wavelengths). However, the vertical distribution can vary: on 04 July 2006 (left panel), after the passage of a convective system, dust aerosols are found in a homogeneous layer extending from ground level up to approximately 3 Km, whereas on 07 July 2006 (right panel), dust aerosols are transported in an elevated layer above the boundary layer and extending from approximately 1.5 to 4 km (the Saharan Air Layer, SAL).

Further details on the SOP2_a1 campaign may be found at <http://aoc.amma-international.org/>.

Several good ITD flights were performed by the two falcons; unfortunately, due to technical problems on Wind for the first joint flight and to electrical problems latter on the F-Falcon, only one full joint ITD flight was accomplished. The G-Falcon had two very productive transit flights from Djerba to Niamey on its way in and from Niamey to Agadir on its way out, clearly spotting the crossing of the ITD in both cases and documenting the heat low. The F-Falcon was not able to fly its scheduled Niamey-Agadir flight.

A long transect flight from 15°N to the Cotonou was made by the ATR42, but the F-Falcon was not able to participate (as he did in SOP1), due to technical problems. The ATR42 subsequently overflew the Atalante despite extremely difficult meteorological conditions (low Cb and strato cumulus over the Guinea Gulf).

MCS flights were mostly performed by the ATR42, with two objectives: i) exploring the role of the convective systems in producing mineral dust through local soil erosion, and apportioning their relative contribution to the total column dust content; ii) documenting the dynamical environment of the atmosphere before and after the passage of a MCS, with special focus on the perturbation of the boundary layer and its restoration in the following days. As mentioned above, few large MCSs were observed, but local convection provided several good situations that were well documented.

5. Training of African forecasters and ensuring meteorological forecasting during SOP1 and SOP2a_1

Before the beginning of the wet SOPs, a workshop was held from May 22 to June 2, to train 18 African forecasters from 12 West African countries (Benin, Burkina Faso, Cameroun, Gambia, Guinea, Ghana, Ivory Coast, Mali, Niger, Nigeria, Senegal and Togo). In collaboration with ACMAD, these trained forecasters constitute the AOC-Forecast team implemented during the 4 months of the wet-SOP of AMMA (June to September).

The frame of this workshop was ensured by 3 scientists of Météo-France and the forecast division of ACMAD, receiving a strong logistical support of ACMAD. After a short presentation of AMMA and a state of scientific knowledge on the system of West African monsoon and the



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precipitating convective systems, the priority was given to the practice on archived and real time situations. The working tools were Synergie stations developed by Meteo-France, and the SOP Web site, developed and maintained by CNRM and Medias-France (AOC-Web; <http://aoc.amma-international.org/>). A novelty was to propose a synthetic approach based on Anasyg/Presyg concept developed for mid-latitudes and adapted to West Africa. It is called WASA and WASF for West Africa Synthetic Analysis and West Africa Synthetic Forecast, respectively.

Three teams of 8 to 9 forecasters follow one another over the 4 month period to ensure the operation of AOC-Forecast. A forecast until Day+2 6UTC is carried out 7days/7 with 2 daily briefings at 8 and 18 o'clock to answer the requests of AMMA operations, which include the safety of persons and observational platforms (aircrafts, balloons...) and the flight operation decisions. The synthetic charts and a bulletin are daily diffused via the AOC Web site. A scientific secretariat of the AMMA forecast center was set up to help the forecasters with the reports and to evaluate the behaviour of the models.

The assessment of the training workshop of the AOC-Forecast is very positive. It demonstrates that it is possible to renew the forecasting methods on West Africa using numerical forecasts and dedicated observations. The expertise of the forecasters together with the knowledge of the basic processes, allow improving the forecast of convective precipitating systems still inadequately represented by numerical models. The synthetic approach (WASA/F) proved to be adapted and very useful. In addition, the strong mobilization and the enthusiasm of the African forecasters finally having working tools to apply and keys to understand, were decisive for the success of this experiment. This success was made possible thanks to a strong logistical support of ACMAD and funding from WMO, AMMA-EU & AMMA-France.

6. Miscellaneous on SOP operations and related events

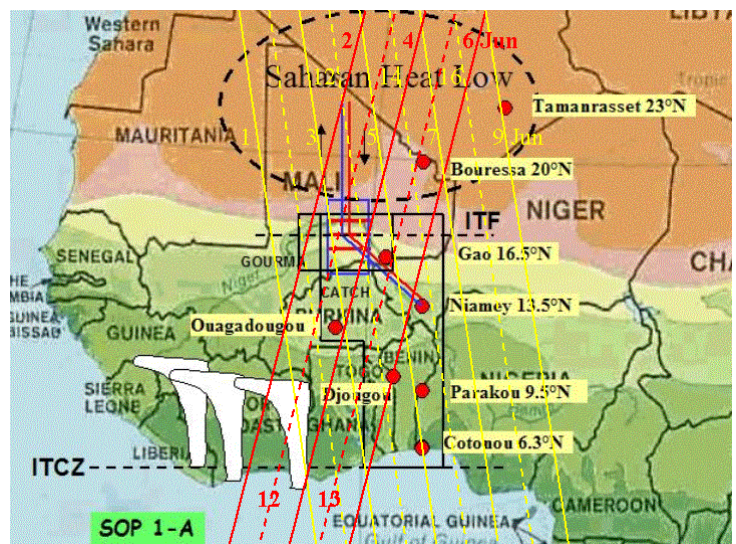
Press travel and official opening of SOP2 10th of July 2006.

From July 5 to 11, 2006, about 30 people visited AMMA's African experimental sites in Benin and Niger. Among the participants were more than 15 journalists from Africa, France, Germany and UK, several representatives and press officers of the AMMA funding organisations as well as invited scientists from other projects. This press travel was organised in the frame of AMMA external communication, it's aim was to inform on AMMA's objectives, it's implementation in the field and it's instrument deployment in West Africa. It was also the opportunity to assist to the ceremony of the official launch of SOP2 on July 10th by the minister of the Ministère des Enseignements Sécondaire, Supérieur, de la Recherche et de la Technologie. A detailed report will be on the web before end of July. (<http://www.amma-international.org/>)

Secondary AOC Benin: Since 1st of June, Tobias El-Fahem Tobias.Elfaqhem@ird.fr is the responsible coordinator of the AOC. Ariane Borgstedt introduced him into his new working field during one month of close collaboration. Ariane Borgstedt left Benin for a new professional challenge in Jordan. We wish her all the best.

7. Launch of CALIPSO and CLOUDSAT

The Cloud Aerosol Lidar and Infrared Pathfinder Satellite Observation (CALIPSO) - <http://www-calipso.larc.nasa.gov/> was launched on April 28, 2006 with the cloud profiling radar system CloudSat - <http://cloudsat.atmos.colostate.edu/> - satellite. CALIPSO and CloudSat are highly complementary to provide new information on the vertical distribution and properties of aerosols and clouds. CALIPSO embarks an active lidar instrument and passive infrared and visible imagers to probe the vertical structure and radiative properties of aerosols and clouds over the globe. Since May 31, CALIPSO and CloudSat fly in formation with three other satellites (AQUA and AURA from NASA and PARASOL from CNES) in the AQUA-train constellation to enable a better understanding of the Earth-atmosphere system from the broad array of sensors on all these spacecraft.





During AMMA CALIPSO and CloudSat will be particularly helpful to analyse the vertical structure of the monsoon flow and its progression towards the north, the strength of the heat low, the intrusion of dry air with respect to the Inter tropical discontinuity, occurrence and vertical extent of mesoscale convective systems, characterisation of ice and water contents ...

Figure 1 shows the tracks of CALIPSO and CloudSat as planned for SOP1. Yellow lines are daytime over-passes (about 13:30 UTC) and red are night time (about 1:30 UTC am). Their repeat cycle is 16 days. First lidar measurements were made on 6th June.

8. AMMA Implementation Plan version 3.0

Since the end of May 2006, the International Implementation Plan of AMMA, including all updated TT-Documents and a covering chapter, is available on the web as pdf-document (<http://amma-international.org/implementation/docs/icigdocs/index>).

9. AMMA data base - data policy and access

AMMA aims to study in collaboration with African scientists the monsoon system from its geophysical aspects to its socio-economic impacts. The multidisciplinary analysis of the observations is a key element of the AMMA strategy. In this perspective, "the AMMA data and publication policy" has been designed and approved by the International Governing Board (IGB). The document is available under <http://amma-international.org/database>

The charter covers only data collected by institutions and individual scientists participating in the project during the AMMA EOP period (2005-2007). All pre-existing knowledge is excluded. The access given to the data only covers the usage of the data in the framework of the scientific objectives of AMMA. This categorically excludes the redistribution of data to third parties and the usage for commercial applications. The text emphasizes the duty of communication and eventually co-publication between data producers and data users and, the obligation of submitting any publication related to AMMA to the Project Office.

To access the data, any interested scientist has to submit an application including an abstract of the intended work and to sign the charter. The application form, as well as the complete text of the data and publication policy, is accessible since mid-June under the following address : <http://amma-international.org/database>. The data access authorization will be given under the authority of the ISSC. In case of agreement by the ISSC, a login/password set of identification will be provided to the scientist allowing him to reach the database user interface and request AMMA datasets.

10. Availability of SAF Land products for AMMA users

The AMMA community has expressed strongly its needs in radiative parameters derived from MSG data and generated by SAF Land at Institute of Meteorology of Portugal. These parameters are available for AMMA users.

MEDIAS-France, as the service unit of POSTEL, the network of thematic competences on "Land Surfaces", and the Institute of Meteorology have come to an agreement identifying POSTEL as a beta-user of SAF Land products. According to this agreement, the SAF Land has committed itself to supply POSTEL with radiative parameters; whereas POSTEL disseminates them to the AMMA community and compiles, summarizes and transmits to SAF Land the user feedback on the quality and usefulness of products for their applications.

The operational production of radiative parameters of SAF Land over Africa, such as the Down-welling Shortwave Surface Flux (DSSF), the Down-welling Longwave Surface Flux (DLSF), the Land Surface Temperature (LST) and the surface albedo, has started at the Institute of Meteorology mid-July 2005. Since that time, products are uploaded at MEDIAS-France in real time.

As products are available, MEDIAS-France customizes them, in terms of projection (regular latitude/longitude grid), resolution (0.05°), and spatial coverage (West Africa), to match the specifications of the AMMASAT database, where they are transferred to be accessible to the AMMA users.

For any additional information, don't hesitate to get in touch with Roselyne Lacaze (lacaze@medias.cnes.fr), the contact point of POSTEL/MEDIAS-France for AMMA.



11. AMMA-Africa : Workshop in Ouagadougou, May 2006

A CSAM (Comité de Suivi Africain de la Mousson) meeting was held in Ouagadougou in May to update the PIAF (Plan d'Implémentation Africain) and discuss the funding possibilities. 22 participants attended the meeting. A more detailed report on this event will be provided in a later issue of the newsletter.

12. AMMA-US: 2-day workshop in Washington, May 2006

The workshop attracted more than 80 people indicating the enthusiasm that exists in the US to contribute to AMMA. The major outcome of the workshop is the establishment of an AMMA-US Science Team build around 4 Working Groups: West African Monsoon and Global Climate, Water Cycle, Land-surface-atmosphere feedbacks and AMMA-downstream. Some discussion is also ongoing regarding the establishment of other cross-cutting groups that may include "downscaling". There was also agreement at the workshop to work towards establishing an AMMA-US datacenter to coordinate the US data.

More information on the workshop including summary and the presentations can be found under the following address: <http://www.joss.ucar.edu/amma/meetings/200605/>

13. AMMA-EU and AMMA France meeting on Land-surface processes. May 2006

Representing four different work packages in the AMMA-EU, 23 AMMA-EU scientists from five countries met for three days (10-12 May) in Garmisch-Partenkirchen at the Institute for Meteorology and Climate Research (IMK-IFU) of Forschungszentrum Karlsruhe (FZK). The objective of the meeting was to provide an overview on the current state of the art in modelling, observing, and understanding hydrological and physical processes at the land surface within AMMA-France & AMMA-EU and to discuss and to define in more detail research topics to be performed across the different West African research sites and across the different work packages.

Altogether 18 oral presentations were given, providing an impression of the excellent research performed by all partners. Particular emphasis was put on future integration of remote sensing information in the process studies, on ground truthing of satellite derived evapotranspiration and soil moisture fields, as well as on establishing tighter links to the AMMA Land Surface Intercomparison Project (ALMIP). As cross sectional future topic, the comparison of energy -, water -, and CO₂ fluxes and soil emissions under different climate conditions was defined.

The presentations and the minutes of the meeting in Garmisch-Partenkirchen are available on the AMMA-EU webpage (restricted access).

14. AMMA EU Topping-Up call

In the framework of the specific call opened by the EC to integrate Targeted Third Countries (TTC) in existing projects, an extension of AMMA-EU partnership has been submitted the 16th of May.

This extension aims to integrate 17 new African partners in the Consortium of AMMA-EU and to strengthen the Impact work packages by their expertise.

This extension, also called AMMA TTC will be evaluated by the EC until mid-July. If the proposal is successful, the contract negotiation should start in September in order to sign the Contract in November and to be funded before the end of 2006. Any way this experience will remain a rich experience for all the partners.

From 24th to 26th of April, a meeting was organized in Dakar to prepare the TTC-document. 30 scientists from seven African and three European countries elaborated the strategy, defined original but achievable objectives in the frame of AMMA and calculated the necessary budget under the given constraints of the call.

15. SOP Meeting: debriefing and preliminary results, November 2006

During the last weeks, the agenda of the meeting was elaborated taking into account the necessity of a SOP debriefing and the organization of ongoing and future scientific work in the frame of the Working Groups (WG). The meeting will take place between 6 and 11 November 2006 with an estimated number of participants between 150 and 200. The meeting venue will be Paris or Toulouse. By mid August, you will find further information on the agenda as well as details on the registration and registration fees on the following web site of AMMA International. <http://www.amma-international.org/meetings/thematicWorkshops/index>.



16. AMMA International conference of Dakar: Book and CD

Last not least the Dakar conference book reached its finishing touch! It was a tremendous work to get the multitude of files, coming from all over the world and produced with different software, edited in English and French. But now the pdf-files are sent to the printing company, the book should be printed and distributed before September. In parallel, a web page is opened to allow the download of the files:

<http://www.amma-international.org/meetings/internationalConferences/dakar2005/book/index>

As the Dakar conference was very well attended and most of the authors of presentations and posters submitted their abstracts, the book provides on 700 black and white pages detailed information about the implementation and the science of AMMA.

In addition to the book, a **CD** was produced providing the principal documents of AMMA as pdf-files (all files of the Dakar conference book), the documents of AMMA International (International Science Plan and International Implementation Plan) and the Newsletters.

The book and the CDs will largely be distributed. All participants of the conference will get a paper copy of the book, but also the African national centres of AMMA, the actively participating laboratories, the funding agencies and the endorsing international research programmes.

Used acronyms

ACMAD	African Centre of Meteorological Application for Development	ISSC	International Scientific Steering Committee
AEJ	African Easterly Jet	ISSC-EC	International Scientific Steering Committee – Executive Committee
AMMA	African Monsoon Multidisciplinary Analyses	ITD	Inter Tropical Discontinuity
AMMA-EU	AMMA Europe	MCS	Mesoscale Convective System
AOC	AMMA Operation Center	MIT	Massachusetts Institute of Technology
AQUA	NASA Earth Science satellite mission collecting information about the Earth's water cycle	MSG	Meteosat Second Generation
ASECNA	Agence pour la Sécurité de la Navigation Aérienne en Afrique et à Madagascar	NASA	National Aeronautics and Space Administration
AURA	The Aura mission researches the composition, chemistry and dynamics of the Earth's atmosphere as well as study the ozone, air quality and climate.	PARASOL	Mission studying the atmosphere. An original observation of the aerosols and clouds for a better understanding of the Earth's climate.
CALIPSO	Cloud Aerosol Lidar and Infrared Pathfinder Satellite Observation	PI	Principal Investigator
CloudSat	cloud profiling radar system	PIAF	Plan d'Implémentation AMMA Afrique
CNES	Centre National d'Etudes spatiales	RS	Radio-sounding
CNRM	Centre National de Recherches Météorologiques	R/V	Research Vessel
CSAM	Comité de Suivi AMMA Afrique	SOP	Special Observing Period
DCP	Data Collection Platform	TEJ	Tropical Easterly Jet
EC	European Commission	TT	Task Team
ECMWF	European Centre for Medium-Range Weather Forecasts	UK	United Kingdom
EGEE	Etude de la Circulation Océanique et de sa Variabilité dans le Golfe de Guinée	US	United States
EOP	Enhanced Observation Period	UTC	Coordinated Universal Time
GATE	Garp Atlantic Tropical Experiment	WG	Working Group
ICIG	Implementation and Coordination Group	WAM	West African Monsoon
IGB	International Governing Board	WAMEX	West African Monsoon Experiment
IOP	Intensive Observing Period	WMO	World Meteorological Organization