



## The AMMA database

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The AMMA project includes aircraft, ground-based and ocean measurements, an intensive use of satellite data and diverse modelling studies. Therefore, the AMMA database aims at storing a great amount and a large variety of data, and at providing the data as rapidly and safely as possible to the AMMA research community. In order to stimulate the exchange of information and collaboration between researchers from different disciplines or using different tools, the database provides a detailed description of the products and uses standardized formats.

The AMMA database contains:

- AMMA field campaigns datasets;
- historical data in West Africa from 1850 (operational networks and previous scientific programs);
- satellite products from past and future satellites, (re-)mapped on a regular latitude/longitude grid and stored in NetCDF format (CF Convention);
- model outputs from atmosphere or ocean operational (re-)analysis and forecasts, and from research simulations. The outputs are processed as the satellite products are.

Before accessing the data, any user has to sign the AMMA data and publication policy. This chart only covers the use of data in the framework of scientific objectives and categorically excludes the redistribution of data to third parties and the usage for commercial applications. Some collaboration between data producers and users, and the mention of the AMMA project in any publication is also required.

The AMMA database and the associated on-line tools have been fully developed and are managed by two teams in France (IPSL Database Centre, Paris and OMP, Toulouse). Users can access data of both data centres using an unique web portal. This website is composed of different modules :

- Registration: forms to register, read and sign the data use chart when an user visits for the first time
- Data access interface: friendly tool allowing to build a data extraction request by selecting various criteria like location, time, parameters... The request can concern local, satellite and model data.
- Documentation: catalogue of all the available data and their metadata.

These tools have been developed using standard and free languages and softwares:

- Linux system with an Apache web server and a Tomcat application server;
- J2EE tools : JSF and Struts frameworks, hibernate;
- relational database management systems: PostgreSQL and MySQL;
- OpenLDAP directory.

In order to facilitate the access to the data by African scientists, the complete system has been mirrored at AGRHYMET Regional Centre in Niamey and is operational there since January 2009. Users can now access metadata and request data through one or the other of two equivalent portals: <http://database.amma-international.org> or <http://amma.agrhymet.ne/amma-data>.