



Université Kinshasa



Unité de Physique
appliquée à l'espace



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Research



**SCHOOL ON SPACE WEATHER
GIS, GPS Data Base, Internet and Computer Grid
Kinshasa September 11 to 24, 2011**

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Bruno Kahindo
Coordinator ISWI of RDC
Local scientific secretary

Christine Amory-Mazaudier
International scientific secretary

Committees

Honorary Committee

Minister of Superior training and Universities (ESU)
Rector of Kinshasa University
General Academic Secretary

Local Committee

Prof. Lubunga Pene Shako – Fac Polytechnique/UNIKIN (President)
Bruno Kahindo - Fac Polytechnique/UNIKIN (scientific secretary)
Marcelline Ngomba –Fac Sc. Agronomique/UNIKIN (scientific secretary)
Prof Baudouin Michel -ERAIFT
Prof. Bertin Bagula Chibavunya- Fac Polytechnique/UNIKIN
Prof. Tozin Rosemond- Fac Polytechnique/UNIKIN
Prof. Moanda Ndeko- Fac Polytechnique/UNIKIN
Prof. Kazadi Mukenga- Fac des Sciences/UNIKIN
Prof. Nzuru Nsekere- Fac Polytechnique/UNIKIN
Muyaya Bruno- ERAIFT

International Committee

Christine Amory-Mazaudier (France) - scientific secretary
Nicolas Bergeot (Belgique)
Prof. Télesphore Brou (France)
Les Cottrell (USA)
Bienvenue Dinga (Congo Brazzaville)
Frédéric Ouattara (Burkina Faso)
Viviane Pierrard (Belgique)
Monique Petitdidier (France)
Mikhael Zhizhin (Russie)

I. Place of the school and logistic

Opening Ceremony : September 12 at 10h



The choral of the University of Kinshasa



Two ministers participating to the opening ceremony

Minister of Education and Universities

Minister of Oil and gas

General Academic Secretary



Bruno Kahindo : ISWI coordinator for RDC presenting the school activities



Photo at the end of the opening ceremony

Lecture room



Rooms for practical work



Room of the University of Kinshasa



Room of ERAIFT

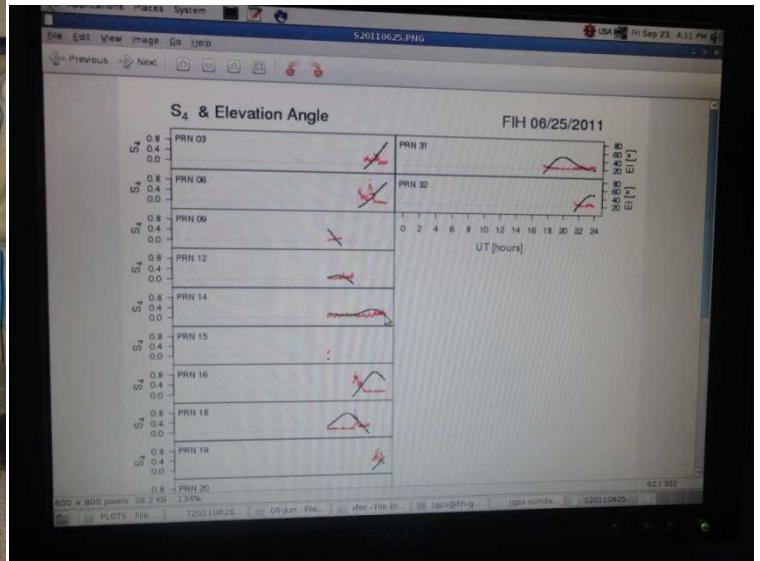
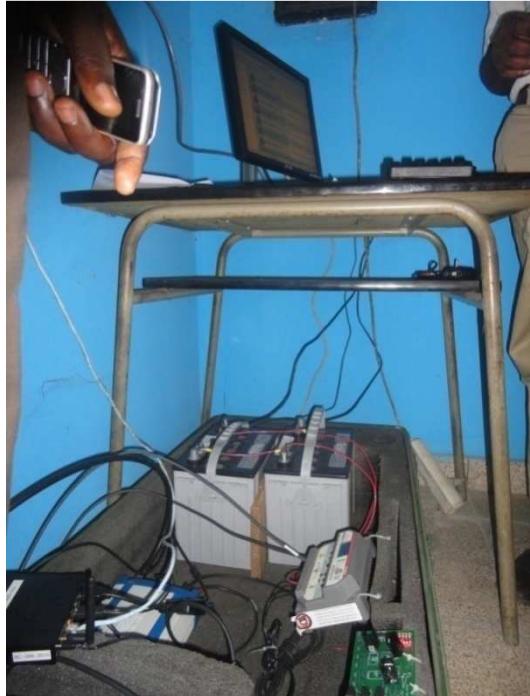
Transport



Lunch



Visit of the laboratory of Space Science : SCINDA experiment



Day on computer ressources at the faculty of pharmacy

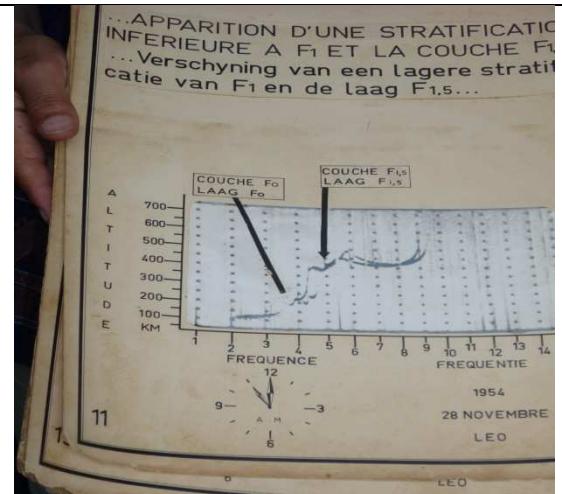


Visit of the observatory near Kinshasa

This observatory was operating during the International Geophysical Year 1957



Papa NDUAZU was working at the observatory in 1957



Ionogramme of November 28, 1954



Photo : closing ceremony

All the students received a certificate and the CD of the school

III. TEACHERS

Burkina Faso, Côte d'Ivoire, France, RC, RDC, Réunion, Russie, USA

AMORY-MAZAUDIER Christine , FRANCE 	<u>Scientific secretary of the school</u> Laboratoire de Physique des Plasmas (LPP) UPMC , 4 Avenue de Neptune 94107 Saint-Maur-des-Fossés, France Christine.amory@lpp.polytechnique.fr
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NGOMBA Marcelline, RDC 	Faculty of Agronomy / Kinshasa, Republic off democratic Congo (RDC) ngombalina@yahoo.fr
PETITDIDIER Monique, FRANCE 	LATMOS, Institut Pierre et Simon Laplace , 11 Boulevard d'Alembert, 78240 Guyancourt, France monique.petitdidier@latmos.ipsl.fr
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ZHIZHIN Mikhail , RUSSIA 	Space Research Institute (IKI) Russian Academy of Sciences 84/32 Profsoyuznaya Str., 117997, Moscow, Russia Mikhail.zhizhin@gmail.com

Training Team

From left to right : Mikhail, Marcelline, Bienvenue, Bruno, Monique, Les, Frédéric
Télosphore was missing



Guest house for the professors



IV. Summary of the Programme

Training on GIS and Teledetection by BROU Yao and NGOMBA Marcelline

- GIS : Geographic Information System
- Teledetection

Training on Examplex of Combination of SIG and GPS, by DINGA Bienvenu

- GPS applied to navigation on the Congo River
-

Training of COTTRELL Les on Internet

1. The Internet Digital Divide: the emergence of Africa, see
<http://www.slac.stanford.edu/grp/scs/net/talk11/kinshasa.pptx>
2. Internet History, trends and futures, see
<http://www.slac.stanford.edu/grp/scs/net/talk11/internet-history.pptx>
3. How is the Internet performing, see
<http://www.slac.stanford.edu/grp/scs/net/talk11/perform.pptx>
4. Cell Phones, see <http://www.slac.stanford.edu/grp/scs/net/talk11/cellphone-work.pptx>
5. Smart phones & other Mobile computing, see
<http://www.slac.stanford.edu/grp/scs/net/talk11/smartphones.pptx>
6. Diagnosing network problems for non-networkers, see
<http://www.slac.stanford.edu/grp/scs/net/talk11/diagnosis.ppt>

Others

1. Geolocation, see <http://www.slac.stanford.edu/grp/scs/net/talk10/geolocation.pptx>
2. How does the Internet work, see
<http://www.slac.stanford.edu/grp/scs/net/talk09/ictp-tcpip.ppt>
3. Network Measurements, see
<http://www.slac.stanford.edu/grp/scs/net/talk10/internet-measure.pptx>

Training of ZHIZHIN Mikhail on SPIDR

The Space Physics Interactive Data Resource (SPIDR) (<http://spidr.ngdc.noaa.gov>) is a de facto standard data source for solar-terrestrial physics, functioning within the framework of the World Data Center System. It is a distributed database and application server network, built to select, visualize and model historical space weather data. SPIDR can work as a fully-functional web-application (portal) or as a Grid of web-services, providing functions for other applications to access its data holdings.

The hands-on training included basic course for interaction with the SPIDR web portal as well as in-depth lessons for web service use with SOAP and REST clients (Java, Matlab, IDL), installation and management of a SPIDR node, database architecture, and metadata management in SPIDR Virtual Observatory.

PETITDIDIER Monique & KALENDA Dibungi : Day on computer ressources.

Texte à mettre en anglais par monique

Training of PIERRARD Viviane on Space Weather made by Christine Amory-Mazaudier and Bruno Kahindo

The Sun

Interplanetary medium

The Interactions between the Sun and the Magnetosphere

Ionosphere and Plasmasphere

Motions of particle in a magnetic field

Neutral Atmosphère (stratosphere, troposphere ..)

Effects of the solar radiations

Training of AMORY-MAZAUDIER Christine on The Earth's magnetic field

Transient variations of the Earth's magnetic field associated to the different sources

- Regular source : atmospheric tides
- Irregular source : magnetic storms and all the kind of solar events

Use of the geomagnetic indices to characterize the event

Indices presented : AU, AL, Aa, Dst, Am

Training of KAHINDO Bruno : Tools of the ISWI programme SID et GPS

- Presentation
- Use
- First Observations

Training of OUTTARA Frédéric : Equatorial Ionosphere and the use of GPS

- Generalities on the Equatorial Ionosphere

- GPS : GNSS
- Systems of measure of Ionosphere
- Use of GPS for the determination of the TEC
- Method to determine the TEC from one stations

V. SCHEDULE OF THE SPACE WEATHER SCHOOL SEPTEMBER 11-24, 2011

First Week September 12 to 17 : Space Weather, GIS, Data base Internet 34.5h

	Monday 12	Tuesday 13	Wednesday 14	Thursday 15	Friday 16	Saturday 17
9h-10h30	Opening Ceremony	Space Weather Introduction Christine	Space Weather : The sun Bruno	Space Weather GIRGEA Christine	Data Base Mikhail	Computer ressources And Grid Monique
10h30-11h00	Coffee Break					
11h00-11h15	GIS Marcelline	Internet Les	Contribution of ERAIFT at the management of natural ressources in Subsaharienne Africa Reinforcement of capacities Prof Baudouin Michel	Internet Les	Internet Les	Computer ressources and Grid Monique
11h15-12h30			Practical work On data base Group of Geography Mikhail			
12h30-14h00	Lunch					
14h00-15h30	Internet Les	Data base Mikhail	Practical work On data base Group of Physicists Mikhail	Internet Les	Poster session	Computer ressources and Grid Monique
15h30-16h00	Coffee Break					
16h30-17h30	Data Base Mikhail	Data Base Mikhail	Space Weather Christine	Practical work On data base Group of the engineers Mikhail	Poster session	Computer ressources and Grid Monique

Second Week September 19 to 24 GIS, GPS/ GNSS , Ionospheric studies 30h

	Monday 19	Tuesday 20	Wednesday 21	Thursday 22	Friday 23	Saturday 24
9h-10h30	GIS Télesphore + Marcelline	Equatorial Ionosphere /GPS Frédéric	Equatorial Ionosphere /GPS Frédéric	GPS/applications Bienvenue	Equatorial Ionosphere /GPS Frédéric	Closing ceremony
10h30-11h00	Coffee Break					
11h00-12h30	GIS T+M Presentation of OSFAC Florence	Lecture GIS T+M	Lecture GIS T+M	Lecture GIS T+M	GPS/applications ISWI Instruments SID and GPS Bienvenue+ Bruno	
12h30-14h00	Lunch					
14h00-15h30	GIS T+M	Practical work GIS T+M+B	Practical work GIS T+M+B	Terrestrial Magnetism Christine	Poster session	
15h30-16h00	Coffee Break					
16h00-17h30	GIS Bienvenue	Practical work GIS T+M+B	Practical work GIS T+M+B	Meeting	Visit of a Laboratory SCINDA GPS Bruno	

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VII. Le CERTIFICAT de participation

