



IGRGEA LETTER

International Geophysical Research Group /Europe-Africa
International Geophysical Research Group /Europe-Asia

IGRGEA

At the end of the IEEY (International Equatorial Electrojet Year), in 1995, IGRGEA (International Geophysical Research Group Europe Africa) has been organized to follow the research work initiated during IEEY, in 1992. Since January 2003 IGRGEA has been established at the Institute of Geophysics in Hanoi, Vietnam.

The last letter, No. 57, dated November 2016.

ALGERIA

Dr Fatma ANAD of CRAAG supported his thesis on 17 May 2017 at the Houari Boumedienne University in Algiers. The title of her thesis is: "*Spatial and temporal modeling of the geomagnetic field*".



Dr Fatma ANAD used among other things the data of the magnetometer AMBER installed in Médéa in Algeria. This magnetometer was provided by Endawoke YIZENGAW of Boston University. ([Http://magnetometers.bc.edu/index.php/78-magnetometers/78-home](http://magnetometers.bc.edu/index.php/78-magnetometers/78-home))

COTE D'IVOIRE

Côte d'Ivoire will organize the 3rd edition of the School of the ISWI-Maghreb-Africa school on Space Weather, from 16 to 28 October 2017 in Abidjan.

FRANCE

The 6th edition of the school on the use of GPS for ionosphere studies was organized by Rolland FLEURY at the 'Ecole Nationale des Télécoms in BREST', from 13 to 17 February 2017. This school brought together some participants who work With the GPS data of their country.



participants

ABU ELEZZ Ola Egypt

EL BOUYAHYAOUI Khaouala Morocco

ER-REGUIG Zakaria Morocco

GNABAHOU Allain Burkina Faso

HAMMOU ALI Omar Algeria

NAMEMA Emmanuel Burkina Faso

OUATTARA Frédéric Burkina Faso

TABTI Lahouaria Algeria

ZOUNDI Christian Burkina Faso

Training on the use of GPS data for ionospheric studies was done in the form



of a practical work, from 13 to 17 February 2017 in Brest (IMT Atlantique). Later, from February 20 to 25 2017, at the request of the iono team of the University of Koudougou, the training was on the post-processing of the measurements recorded by the scintillator (receiver Novatel GSV4004B provided by Telecom-Bretagne) operational at the University of Koudougou. A database of Rinex files, scintillation indices (S4 and sigma_phi) and VTEC calculations was created, (this base currently being finished to process the first months of 2017). There are also several months of measurements by the scintillator SCINDA provided by the University of Boston, which has operated in parallel with the Novatel scintillator (a data base was also created with the scintillation index files).

MOROCCO- CRASTE-LF

GPS School was organized by CRASTE-LF from 16 to 21 January 2017 in the framework of the Master on GNSS.

Number of participants: 17

Country: Central Africa, Niger, Cameroon, Morocco, Tunisia.

Courses are available on the website:

<http://www.unoosa.org/oosa/en/ourwork/icg/activities/2017/icg2017-event.html>



Group photo

UNOOSA / AUSTRIA2

The UN-Nepal workshop organized by the Office for Outer Space Affairs, from 12 to 16 December 2016 in Kathmandu resulted in an article published in two parts (February and March 2017) on the website of the journal coordinates. The first part presents an article of popularization of the physics of the relationships Sun Earth intended for non physicists using GNSS applications. The second part presents Rolland Fleury's practical work to extract relevant parameters from GPS data.

Space Weather, from the Sun to the Earth, the key role of GNSS

FEB 2017 | NO COMMENT

The goal of this paper is to give a clear view of the Sun Earth relationships that are complex. The phenomena acting at large scales and essentially related to dynamic and electromagnetic physical processes have been addressed. Besides physics, the work done to develop the training in Space Weather by focusing on Global Navigation Satellite Systems has also been presented. We present this paper as a series in two parts. In this issue the focus is on physics of the relationships Sun, Earth and Meteorology of Space. In March issue, GNSS training and capacity building would be discussed



Dr Christine Amory- Mazaudier

Senior Scientist, University Pierre and Marie Curie and Staff Associate at ICTP. Recently awarded Marcel Nicolet Medal for her work in Space Weather



Dr Rolland Fleury

Associate Professor, Microwave Department of the 'IMT Atlantique' School of Engineering, Brest campus, France



Sharafat Gadimova

Programme Officer, the United Nations Office for Outer Space Affairs, Leads the organization of the activities on GNSS and the development of the International Committee on Global Navigation Satellite Systems



Professor Abderrahmane Touzani

Director, African Regional Centre for Space Science and Technology Education - in French Language (CRASTE-LF), Rabat, Morocco was Professor in University Mohammed V, Rabat, Morocco

<http://mycoordinates.org/>

RDC

Raphaël MUKANDILA of the University of Kinshasa is currently studying research at the University of Strasbourg under the direction of Frédéric MASSON as part of his PhD thesis on:

'Establishment of a GNSS network in the DRC - Implication on kinematics Of the Africa plate and the dynamics of the East African Rift (West Branch).



ICTP/ITALIA

<https://www.ictp.it/>

Two schools were organized, at ICTP, by R. Sandro, P. Doherty and B. Nava.

From 27 to 31 March 2017:URSI-ICTP School on Radio Physics.



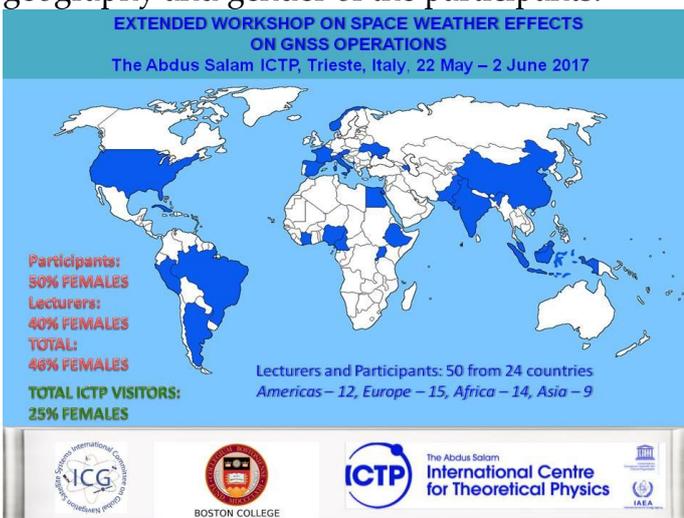
Group Photo



Group photo

From May 22 to June 2 2017: Workshop on Space Weather and its effects on the GNSS operational system.

The figure below shows the distribution in geography and gender of the participants.



50% women and 50% men for the participants