



## 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. 58, dated June 2017.

### COTE D'IVOIRE

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



This school brought together participants from 11 different countries: Algeria, Burkina Faso, Cameroon, Ivory Coast, France, Guinea Conakry, Morocco, RC, DRC, Senegal, Tunisia.

The report of this school will be soon on the site <http://www.iswi-secretariat.org>.

### RDC

Dr. Jean KIGOTSI defended his thesis on November 1, 2017 at the University of Kinshasa UNIKIN, on the theme: '*Analysis of the flash activity of storm systems in the Congo Basin*'



Photo of Dr. Jean Kigosti during the defense

*The jury was as follows:*

*Professor Mbungu Tsumbu: President*

*Professor Zana Ndontoni: Secretary*

*Professor Kazadi Mukenga Bantu: Promoter and Full Member*

*Professor Serge Soula: Full member*

*Professor Christelle Barthe: Full member*

*Alternate members*

*Professor Kakule Kaniki*

*Professor Jean Montanya*

Dr. Jean KIGOTSI has benefited from a cotutelle grant between the University of Kinshasa (DRC) and the University of Toulouse (France), funded by the French Embassy in Kinshasa.

He has made several research stays in France under the direction of Serge SOULA.

## TUNISIA

Dr. Ahmed AMMAR defended his thesis on the '*Study of ionospheric disturbances through VLF waves*' on November 30, 2017 at the University of Tunis El Manar.



The members of the Jury were:  
 President: \* Pr. Mohamed Slim Fayache \*,  
*Professor at the Faculty of Sciences of Tunis.*  
 Rapporteur: \* Pr. Taoufik Aguilu \*,  
*Professor at the National School of Engineers of Tunis.*

Rapporteur: \* Pr. Nour E. Raouafi \*,  
*Professor at Johns Hopkins University Applied Physics Laboratory.*

Examiner: \* Pr. Walid Touayar \*,  
*Professor at the National Institute of Applied Sciences and Technology.*

Thesis supervisor: \* Pr. Hassen Ghalila \*,  
*Associate Professor at the Faculty of Sciences of Tunis*

Here is the link (dropbox) to download a copy of the thesis:

[https://www.dropbox.com/s/r85t66db3t0t1nr/t\\_hese\\_AMMAR2017.pdf?dl=0](https://www.dropbox.com/s/r85t66db3t0t1nr/t_hese_AMMAR2017.pdf?dl=0)

## VIETNAM

As part of the Ivorian Franco Vietnamese cooperation project, our group GIRGEA has trained 6 students and Christine

AMORY-MAZAUDIER as head of the French side of the project has received the "Campaign" medal which is awarded by the Academy of Sciences from Vietnam, to foreign researchers who have contributed to the development of research in Vietnam.



On this picture from left to right  
 Dr. TRUONG Thanh  
 Dr. HUY Minh (Head of the Vietnamese side)  
 Dr. PHAM Xuan Thanh  
 Dr. Christine Amory-Mazaudier  
 Dr. NGYUEN Thang  
 Dr. TRAN THI Lan  
 Dr. LUU VIET Hung

Dr. PHAM THI THU Hong could not be present for this photo at the Academy of Sciences





## List of publications of the year 2017

Amory-Mazaudier, C., R. Fleury, S. Gadimova, A. Touzani (February 2017), Space Weather, from the Sun to the Earth, the key role of Global Navigation Satellite Systems , Part I. From the Sun to the Earth Space Weather and its effects, Coordinates a monthly magazine on positioning, navigation and beyond, <http://www.mycoordinates.org>, invited paper.

Amory-Mazaudier, C., R. Fleury, S. Gadimova, A. Touzani (March 2017), Space Weather from the sun to the Earth, the key role of Global Navigation Satellite Systems- Part II: training on daily global positioning system GPS, Coordinates a monthly magazine on positioning, navigation and beyond, <http://www.mycoordinates.org>, invited paper.

Amory-Mazaudier, C., O. Bolaji, V. Doumbia, On the historical origins of the CEJ, DP2 and Ddyn current systems and their roles in the predictions of ionospheric responses to geomagnetic storms at equatorial latitudes, J. Geophys. Res., doi: 10.1002/2017JA024132

Ankit Jain, Pascal Pagani, Rolland Fleury, Michel M. Ney, Patrice Pajusco, Efficient Time Domain HF Geolocation Using Multiple Distributed Receivers, 11th European Conference on Antennas and Propagation (EUCAP) 2017.

Doumbia, V., K. Boka, O. D. F. Grodji, C. Amory-Mazaudier, and M. Menvielle, Induction Effects of Geomagnetic Disturbances in the Geo-electric Field Variations at Low-latitude, Ann. Geophys., 35, 1-13, 2017.

Doumbia, V., F Grodji, On the Longitudinal Dependence of the Equatorial Electrojet Geophysical Monograph 220,, First Edition. Edited by Timothy Fuller-Rowell, Endawoke Yizengaw, Patricia H. Doherty, and Sunanda Basu. © 2017 American Geophysical Union. Published 2017 by John Wiley & Sons, Inc.

Grodji, F., V. Doumbia, K. Boka, C. Amory-Mazaudier, M.Menvielle, Estimating some parameters of the equatorial ionosphere electrodynamic from ionosonde data in West

Africa , Advances in Space Research 59, 311-325, 2017

Kaab, M., Z. Benkhaldoun, D. Fisher, B. Harding, A. Bounhir, J. J. Makela, A. Laghriyeb, K. Malki, A. Daassou, and M. Lazrek, (2017) , Climatology of thermospheric neutral winds over Oukaïmeden Observatory in Morocco, Ann. Geophys., 35, 161–170, 2017, [www.ann-geophys.net/35/161/2017/](http://www.ann-geophys.net/35/161/2017/) doi:10.5194/angeo-35-161-2017

Kahindo B. Murumba , A. Kazadi Mukenga Bantu, R. Fleury, F. Tondozi Keto, A. Zana Ndontoni, M. Kakule Kaniki, C. Amory-Mazaudier, K. Groves, Contribution à l'étude de la scintillation ionosphérique équatoriale sur la crête sud de l'Afrique, Journal des Sciences, Vol. 17, N° 2, pp 27-47, Juin 2017, I.S.S.N 0851-4361

Kigotsi J. K., Soula S., Georgis J.-F., to appear in 2018, Comparison of lightning activity in the two most active areas of the Congo Basin, accepted in *Nat. Hazards Earth Syst. Sci.*

Loua Rene Tato, Maoro Beavogui, Hassan Bencherif, Alpha Boubacar Barry, Zoumana Bamba and Christine Amory-Mazaudier, Climatology of Guinea : Study of climate variability in N'Zerekore, Journal of Agricultural Science and Technology A 7 (2017) 215-233, doi: 10.17265/2161-6256/2017.04.001

Ouattara F., Zerbo J. L., Kaboré M. and Fleury R., Investigation on equinoctial asymmetry observed in, Niamey Station Center for Orbit Determination in, Europe Total Electron Content (CODG TEC) variation during ~ solar cycle 23, International of Physics , Vol. 12(22), pp. 308-321, 30 November, 2017 DOI: 10.5897/IJPS2017.4684, Article Number: C5EF15666744 ISSN 1992 – 1950

Tran Thi Lan, Le Huy Minh, C. Amory-Mazaudier, R. Fleury. (2017) Climatology of ionospheric scintillation over the Vietnam low-latitude region for the period 2006-2014, Advances in Space Res. <http://dx.doi.org/10.1016/j.asr.2017.05.005>.

Zaourar, N., C. Amory-Mazaudier, R. Fleury, (2017), Hemispheric asymmetries in the ionosphere response observed during the high-speed solar wind streams of the 24-28 August 2010, Advances in Space Research, [doi.org/10.1016/j.asr.2017.01.048](http://dx.doi.org/10.1016/j.asr.2017.01.048).

