

## CV\_ OSSÉNATOU MAMADOU

Assistant Professor (Atmospheric Physics)

Institute of Mathematics and Physics (IMSP), University of Abomey-Calavi (UAC), Benin

email: [ossenatou.mamadou@imsp-uac.org](mailto:ossenatou.mamadou@imsp-uac.org) & [ossenatou.mamadou@gmail.com](mailto:ossenatou.mamadou@gmail.com)

ORCID ID: [0000-0002-2774-6000](https://orcid.org/0000-0002-2774-6000)

Tél: (+229) 66 45 49 01, BP 613 Porto-Novo, Benin Rep.

Female, Married & (03) Children

### PERSONAL STATEMENT

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*I am an Atmospheric Physicist. Apart from teaching activities, I do research in the Micrometeorology and have developed an interest in land surface interactions because of the effects they have on climate from small to global scale. In addition, due to the strong feedback between aerosol particles, energy, carbon cycle, water vapor fluxes and climate (precipitation), I started few years ago to study these particles (aerosol matters).*

### EDUCATION & QUALIFICATION

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#### ○ Education History

Lecturer & Researcher, IMSP, Benin	Nov.15-Present
Postdoctoral Research in Micrometeorology, U. of Liege (Belgium)	Sept14-Dec15
PhD in Energy and Atmospheric Physics, UAC (Bénin) & UdG (France)	May 2014
MSc in Energy and Environment, UAC (Bénin)	June 2009
BSc+1year in Theoretical Physics, UAC (Bénin)	July 2007
BSc in Theoretical Physics, UAC (Bénin)	July 2007

#### ○ Relevant Professional Training Courses

- **The 14<sup>th</sup> Annual Fluxcourse (PHYSICAL)**, Niwot Ridge, Colorado, June 19<sup>th</sup> – 30<sup>th</sup>, 2023, USA
- **African Continent Conference on Basic Sciences for Transformation under the umbrella of the International Year of Basic Sciences for Sustainable Development**, 13-14 June 2023, Kigali, Rwanda. *Invited as a Speaker*
- **Environmental and Social Framework (ESF), World Bank**, April 2023, Cotonou, Benin
- **The 4<sup>th</sup> training course (virtual) on New Advances in Land Carbon Cycle Modeling**, organized by the *Center for Ecosystem Science and Society*, Northern Arizona University, May 17-28, 2021, USA.
- **Research and Proposal Writing in the Sciences** (online), organized by INASP & AuthorAID, From 8 September to 15 December 2020.
- **Regional Online Teaching and Training on Renewable Energy Technologies for Professionals, Practitioners and Universities in ECOWAS Member States**, organized by ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREE), 13-16 October 2020
- Agence Internationale de l'Energie (AIE) Statistiques et Modélisation Energétique, July - October 2020 (Online)
- **Research School on Climate Science**, organized by AIMS Rwanda, 10-20 February 2020 Kigali, Rwanda.
- **Training in Editing, Management and Promotion of the Results of Research Project**, organized by UAC, IRD and DNRST, 09-13 December 2019, Abomey-Calavi, Bénin.

- **OWSD Early Career Fellowship Orientation Workshop**, organized by OWSD, 16-20 September 2019, Trieste, Italy.
  - **International workshop on Land Atmosphere interactions at the regional scale**, Universidad Complutense, 8-10 October 2012, Madrid, Spain.
  - **Training on ‘How to write a scientific article’**, organized by IRD, 19-23 May 2011, Dakar, Senegal.
  - **Training in English**, CELPS, Sep.– Nov. 2009, Accra, Ghana.
- **Main administrative function, IMSP & CEA-SMIA Dangbo, Benin**
- From April 2023 – Present: Responsable de l’étude d’impact environnementale et sociale du Centre d’excellence africain en science mathématique, informatique et applications (CEA-SMIA) de l’Université d’Abomey-Calavi.
  - From March 2019 – Present: Gender Focal Point; *Investigate and Provide advice when there is a harassment complaint at the IMSP. This is done with other administrative staff of IMSP and the University of Abomey-Calavi.*
  - From April 2016 – Present: Responsible of the student and social affairs; *Listen to the student in case of relevant problem, discuss with the administration to find solution.*

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#### HONOURS, AWARDS AND PRIZES (RECENT YEARS)

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##### **The African Academy of Sciences (AAS)**

March 2021

*I was selected as an AAS Affiliate Member, 2021-2025;*

<https://www.aasciences.africa/affiliate/ossenatou-mamadou>

##### **AIMS NEI Women in Climate Change Science Fellowship**

January 2020

*The program made possible by a grant from the International Development Research Centre (IRDC), seeks to foster increased female participation in and contribute to a more sustainable societal response to climate change in Africa, AIMS Rwanda. Amount: 34,970 USD. Project title: **Wavelet Analysis of Climate Variability and Long-Term Surface Ecosystems Exchanges in West Africa.** Duration: 02 years*

##### **OWSD Early Career Fellowship**

December 2019

*with aim to support the fellow for a period of 3 years in establishing an environment where they can maintain an international standard of research and attract, ICTP, Trieste, Italy. Amount: 49,963 USD. Project title: **Assessment of the surface ecosystems exchanges in West Africa: role in the atmospheric changes.***

##### **ARES “ELAN” Post-doctoral Research grant**

March 2016

*to carry out research entitled characterization of turbulence intensities above three complex forest sites in a temperate climate. Amount: 9,999 euros. Duration: 6months*

##### **Wallonia Region Post-doctoral Fellowship, Belgium,**

September 2014

*Duration: 15 months. Project title: **Establishment of the carbon balance of an intensively grazed grassland in southern Belgium: effects of climate and management.***

##### **IPCC Scholarship award**

2014

*To acquire a research equipment. Amount: 8,535 USD. Second round, details on: [http://www.ipcc.ch/ipcc-scholarship-programme/ipcc\\_scholarshipprogramme.shtml](http://www.ipcc.ch/ipcc-scholarship-programme/ipcc_scholarshipprogramme.shtml)*

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#### RESEARCH EXPERIENCE

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**PI of GWAS** ‘Geometric method and Wavelet Transform for driving information in Atmospheric Sciences’ project. A 4-year research project funded by DSTN ACEPartner <https://ace-partner.org/dstn/en/projet/gwas/>

08/2021 to -

**Co-responsible of WP2** “*Impact du changement anthropique sur les processus de transferts et la qualité de l’eau*” in LMI REZOC

03/2019 to -

**University of Liege, Belgium**

2014 to 2015

**Post-doctoral Researcher Fellow**, Unit of Biosystems Physics, Advisors: Professor Marc Aubinet and Dr. Bernard Heinesch

- Validated the local cospectra
- Proposed a methodological approach to correct loss
- Advocated site PIs to use the local cospectra instead of the theoretical one
- Assessed the carbon balance of an intensively managed grassland
- Assessed the annual net ecosystem exchange of an intensively managed grassland
- Investigated the impact of rotational and continuous grazing on the CO<sub>2</sub> flux.

**Water vapor and sensible heat exchanges above two contrasted ecosystems in sudanian climate, Northern Benin (West Africa)**, University of Abomey-Calavi and University of Grenoble, Benin and France

2014

Supervisor: HDR. Arona Diedhiou, Dr. S. Galle and Prof. C.N. Awanou

- Developed procedure to tackle the eddy covariance measurements in West Africa
- Implemented the quality control protocols
- Quantified the sensible heat and water vapor fluxes above two contrasted ecosystems
- Assessed the impact of rainfall and radiation variabilities on these fluxes
- Delivered the energy partitioning above ecosystems
- Investigated the difference in the energy, radiation and H<sub>2</sub>O dynamics

**Institute for Research and Development (IRD) & OUEME2025 Project, Cotonou, Benin** 2007 to 2010

**Research Assistant**, Advisor: Dr. Sylvie Galle & Dr. Basile Kounouhéwa

- Processed the micrometeorological data of the Beninese AMMA-CATCH observatory
- Monitored the eddy covariance data.
- Wrote reports

## **TEACHING EXPERIENCE**

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**Institute of Mathematics and Physics, Dangbo, Bénin**  
**Lecturer**, Department of Physics

November 2016 to -

- Micrometeorology, Master 2 averaging 15 students per year, covering the following topics: *Fundamentals of turbulence, Models and theories of turbulence, The atmospheric boundary layer, Boundary layer processes, Solar radiation, Energy and radiation balance near the surface, Turbulent fluxes, Eddy covariance method, gap filling strategies and some measurement techniques.*
- Developing the syllabus, exams and homeworks.

**Institute of Mathematics and Physics, Dangbo, Bénin**  
**Lecturer**, Department of Physics

December 2016 to -

- Atmospheric Physics, Master 1 averaging 18 students per year, covering the following topics: *Fundamentals of fluids mechanic, Vertical structure of the atmosphere, Thermodynamic of the atmosphere, Radiation in the atmosphere, Atmospheric circulation processes, Basic governing equations and statistical description, Monin Obukhov Similarity Theory, Properties of underlying surface, Heat balance of the earth and the Planetary boundary layer.*
- Developing the syllabus, exams and homeworks.

**Institute of Mathematics and Physics, Dangbo, Bénin**  
**Lecturer, Department of Physics**

April 2019 to -

- Heat and Mass Transfer, Master 1 averaging 18 students per year, covering the following topics: *The different types of heat transfer (conduction, convection and radiation), Heat conduction equation, Fourier's law, Fick's law, Derivation of the differential equation for the temperature field, Transient and steady-state heat conduction, Radiation: processes and properties, Balance equations, Reynold's transport theorem.*
- Developing the syllabus, exams and homeworks.

**Institute of Mathematics and Physics, Dangbo, Bénin**  
**Lecturer, Department of Physics**

Februray 2016 to -

- Optical Geometric and Electromagnetism, at the bachelor levels averaging between 60 and 75 students per semester. The courses covering the following topics: *law and principles of optical geometrics, reflection, refraction, Sinus law, Huygens theorem, Diopter, Mirror, Lens, Blades with parallels faces, Prism, Coulomb, Gauss and Ampere's Laws, Potential and electrostatics field, Electrostatic dipole, Capacitor, magnetic field, Maxwell equations.*
- Developing the syllabus, homework and exams

### Doctoral Students Advised

1/ **Renaud Koukoui**. Project title: Land surface interactions in West Africa, 2022 –, with Professor B. Kounouhéwa, University of Abomey-Calavi, Bénin.

2/ **Miriam Hounsino**. Project title: Gap Filling strategies and Uncertainties estimation for the turbulent fluxes in West Africa, 2019 – 2024, with Professor B. Kounouhéwa, University of Abomey-Calavi, Bénin.

3/ **Yaulande Douanla Alotse**. Project title: Impact of atmospheric aerosols in the solar photovoltaic energy production in Cameroon, **2018 – 03/2023**, with Professor A. Lenouo University of Yaounde 1, Cameroon.

4/ **Armand Tchinda Feudjio**. Project title: Evaluation of seasonal forecasts from the North American Multi-Model Ensemble (NMME) and ECMWF-SEAS5 models in Central Africa using probabilistic and statistical approaches, **2019 – 10/2022**, with Dr. R. Tanessong, University of Dschang, Cameroon.

### Master Students Advised

1/ **Reounoudji Ngalara**, Project title: Analyse en Ondelettes pour la caractérisation des précipitations au Tchad, September 2022.

2/ **Nawal Bolarinwa**, Project title: Étude Théorique des Spectres et Co-Spectres de Turbulence en Condition convective dans la Couche Limite Atmosphérique, September 2022.

3/ **Celeus Cishahayo**, Project title: Turbulence characteristics of Atmospheric Boundary Layer in Unstable conditions over a sudanian cultivated site, September 2021.

4/ **Edwige Akpoly**, Project title: On the influence of aerosols on some meteorological parameters using wavelet transforms, September 2021.

5/ **Arthon Noumon**, Project title: Etude de processus sous-jacents et variables pertinentes contrôlant la variabilité du flux de chaleur latente, September 2020.

6/ **Renaud Koukoui**, Project title: Étude de la fermeture du bilan énergétique sur le site de culture de Nalohou : Contribution du flux conductif, September 2020.

7/ **David F.M. Gnonlonfoun**, Project title: Multiscale analysis of the surface albedo over a cultivated area, July 2020.

8/ **Miriam Hounsino**, Project title: Gap filling of the water vapor exchange and their associated uncertainties, February 2018.

9/ **Joel Oke**, Project title: Analysis of some empirical models for the incoming shortwave radiation in a cultivated area, February 2018.

10/ **Hakim Amanda**, Project title: Turbulence characteristics above a clear forest in a sudanian climate, February 2018.

**University of Abomey-Calavi**, Abomey-Calavi, Bénin

2010 to 2013

**Teaching and Research Assistant**, Department of physics

- I was in charge of General Physics lab for the undergraduate students as well as research and teaching assistant in my laboratory namely ‘Laboratoire de Physique du Rayonnement’.

## PUBLICATIONS

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### *H-index:*

~ 14 papers in IF journals, **Citations:** 309 in Google Scholar; **h-index factor:** 8 in Google Scholar:  
<https://scholar.google.com/citations?user=v6etmiMAAAAJ&hl=en&oi=ao>

### *In review, submitted and in preparation*

**Ossénatou Mamadou**, Armand Mariscal, Renaud Koukoui, Hounsino, Miriam and Basile Kounouhewa « Analysis of second-order moments and turbulence intensities of wind speed components over a non-uniform terrain in Dangbo, southeast Benin » (*submitted in Meteorology and Atmospheric Physics*)

Davies, P., **Mamadou, O.**, Quansah, E., Aryee, J.N.A., Atiah, W.A., Amekudzi, L.K., Sam, F., Galle, S. & Demarty, J. « Variability in Surface Radiative Fluxes over West Africa using Wavelet and Principal Component Analyses. » (*in review in journal of geophysical research*)

**Mamadou, O.** et al. « Drivers of the actual evapotranspiration over the cultivated site as inferred from a long term eddy covariance observations at a Northern Benin. » (*in prep*)

### **2023**

**Ossénatou Mamadou**, Hounsino, Miriam and Basile Kounouhewa « Turbulent Kinetic Energy and turbulence dispersion characteristics over a mixed crop area in Benin » (*accepted in Advances in Air Quality Research in Africa: Proceedings of the First International Conference on Air Quality in Africa (ICAQ'Africa 2022)*)

Koukoui, R., **Mamadou, O.**, Hounsino, M. and Kounouhéwa, B. « Testing the suitability of Marginal Distribution Sampling as a gap-filling method using some meteorological data from seven sites in West Africa » (*accepted in Meteorological Applications*)

Alotse, Yaulande Douanla, **Mamadou Ossénatou**, Dembele André, et Lenouo André. « Bivariate and Partial Wavelet Coherence Analysis of Aerosols Impact on Global Horizontal Irradiation in Far-North and Littoral Regions of Cameroon ». *Journal of the Nigerian Society of Physical Sciences*, 27 février 2023, 1248-1248. <https://doi.org/10.46481/jnsps.2023.1248>.

Hounsinou, Miriam, **Ossénatou Mamadou**, Basile Kounouhewa « Turbulence characteristics in the atmospheric surface layer over a heterogeneous cultivated surface in a tropical region » *accepted in Boundary Layer Meteorology*

## 2022

- Vodounon, Rodrigue B. W., Henoc Soude, et **Ossénatou Mamadou**. « Drought Forecasting in Alibori Department in Benin Using the Standardized Precipitation Index and Machine Learning Approaches ». *International Journal of Advanced Computer Science and Applications (IJACSA)* 13, n° 12 (34/30 2022). <https://doi.org/10.14569/IJACSA.2022.01312113>.
- Alotse Douanla, Yaulande, **Ossénatou Mamadou**, André Dembélé, Djidjoho Renaud Roméo Koukoui, Fifamè Edwige Akpoly, et André Lenouo. « Wavelet Analysis of the Interconnection between Atmospheric Aerosol Types and Direct Irradiation over Cameroon ». *Advances in Meteorology* 2022 (5 septembre 2022): e1030330. <https://doi.org/10.1155/2022/1030330>.
- Tchinda, Armand, Roméo Stève Tanessong, **Ossénatou Mamadou**, Vanessa Tchida Diffo, Zephirin Djomou Yepdo and Jean Bio Chabi Orou. « Predictive skill of North American Multi-Model Ensemble seasonal forecasts for the climate rainfall over Central Africa ». *Meteorological Applications* 29 (1 mai 2022). <https://doi.org/10.1002/met.2074>.
- Miriam Hounsinou & **Ossénatou Mamadou**. « Comparison of three Gap filling approaches in the latent heat flux measurements » OWSD Women in Science without Borders (WISWB), page 156, List of Editors, May 2022.
- Douanla Alotse, Yaulande, Dembélé André, **Mamadou Ossénatou**, et Lenouo André. « Prediction of daily direct solar energy based on XGBoost in Cameroon and key parameter impacts analysis ». In *2022 IEEE Multi-conference on Natural and Engineering Sciences for Sahel's Sustainable Development (MNE3SD)*, 1-7, 2022. <https://doi.org/10.1109/MNE3SD53781.2022.9723309>.
- Hounsinou, Miriam, **Ossénatou Mamadou**, Maxime Wudba, Basile Kounouhewa, et Jean-Martial Cohard. « Integral Turbulence Characteristics over a Clear Woodland Forest in Northern Benin (West Africa) ». *Atmospheric Research* 268 (15 avril 2022): 105985. <https://doi.org/10.1016/j.atmosres.2021.105985>.
- Tchinda, Armand Feudjio, Roméo Stève Tanessong, **Ossénatou Mamadou**, et Jean Bio Chabi Orou. « Assessing Precipitation Seasonal Forecasts in Central Africa Using North American Multimodel Ensemble (NMME) ». *Theoretical and Applied Climatology*, 4 janvier 2022. <https://doi.org/10.1007/s00704-021-03915-3>.

## 2021

- Anwar, Samy A., **Ossénatou Mamadou**, Ismaila Diallo, et Mouhamadou Bamba Sylla. « On the Influence of Vegetation Cover Changes and Vegetation-Runoff Systems on the Simulated Summer Potential Evapotranspiration of Tropical Africa Using RegCM4 ». *Earth Systems and Environment*, 15 septembre 2021. <https://doi.org/10.1007/s41748-021-00252-3>.

## 2019

- Koto N’Gobi, Gabin, Médard Agbazo, **Ossénatou Mamadou**, Eric Alamou, Basile Kounouhewa, and Abel Afouda. ‘Fractal Characteristics in Wind Speed Time Series (WSTS) Observed at Nalohou (Northern Benin)’. *Research Journal of Physical Sciences* 7, no. 1 (January 2019): 1–7.

## 2018

- Nicolini, Giacomo, Marc Aubinet, Christian Feigenwinter, Bernard Heinesch, Anders Lindroth, **Ossénatou Mamadou**, Uta Moderow, et al. ‘Impact of CO<sub>2</sub> Storage Flux Sampling Uncertainty on Net Ecosystem Exchange Measured by Eddy Covariance’. *Agricultural and Forest Meteorology* 248 (January 2018): 228–39.
- Gourlez de la Motte, Louis, **Ossénatou Mamadou**, Yves Beckers, Bernard Bodson, Bernard Heinesch, and Marc Aubinet. ‘Rotational and Continuous Grazing Does Not Affect the Total Net Ecosystem Exchange of a Pasture Grazed by Cattle but Modifies CO<sub>2</sub> Exchange Dynamics’. *Agriculture*,



Sylvie Galle; Manuela Grippa; Christophe Peugeot; Ibrahim Bouzou Moussa; Bernard Cappelaere; Jerome Demarty; Eric Mougin; Jeremy Panthou; Philippe Adjomayi; Euloge Agbossou; Abdramane Ba; Marie Boucher; Jean-Martial Cohard; Marc Descloîtres; Luc Descroix; Mamadou Diawara; Martial Dossou; Guillaume Favreau; Fabrice Gangneron; Marielle Gosset; Basile Hector; Pierre Hiernaux; Bil-Assanou Issoufou; Laurent Kergoat; Emmanuel Lawin; Thierry Lebel; Anatoly Legchenko; Moussa Malam Abdou; Oumarou Malam Issa; **Ossénatou Mamadou** et al : AMMA-CATCH, a critical zone observatory in West – Africa, monitoring a region in transition : Vadoze Zone Journal, July 2018, doi: 10.2136/vzj2018.03.0062

#### 2016

**Mamadou Ossénatou**, Gourlez de la Motte L., De Ligne A., Heinesch B. and Aubinet M.: Sensitivity of the Annual Net Ecosystem Exchange to the Cospectral Model Used for High Frequency Loss Corrections at a Grazed Grassland Site. *Agricultural and Forest Meteorology*, 228–229: 360–69. doi:10.1016/j.agrformet.2016.06.008.

**Mamadou Ossénatou**, Galle S., Cohard J-M., Peugeot C., Kounouhéwa B., Biron R., Hector B. and Zannou A.B.Y.: Dynamics of water vapor and energy exchanges above two contrasting ecosystems in sudanian climate, Northern Benin (West Africa). *Journal of Geophysical Research: Atmospheres*, 2016. doi:10.1002/2016JD024749.

Gourlez de la Motte L., Jérôme E., **Mamadou Ossénatou**, Beckers Y., Bodson B., Heinesch B. and Aubinet M.: Carbon balance of an intensively grazed permanent grassland in southern Belgium. *Agricultural and Forest Meteorology*, 228–229: 370–83. doi:10.1016/j.agrformet.2016.06.009.

Galle, S., C. Peugeot, M. Grippa, V. Chaffard, S. Afouda, E.K. Agbossou, E.E. Ago, M. Arjournin, B. Awessou, M. Boucher, M. Boukari, J-M Cohard, M. Dossou, M. Descloîtres, M. Gosset, B. Hector, E. Lawin, **O. Mamadou**, et al. ‘AMMA-CATCH: un observatoire hydrologique, météorologique et écologique de long terme en Afrique de l’Ouest: résultats importants et données disponibles’, 2016. <http://www.documentation.ird.fr/hor/fdi:010068415>.

#### 2014

**Mamadou Ossénatou**, Cohard J-M., Galle S., Awanou C.N., Diedhiou A., Kounouhéwa B. and Peugeot C. Energy fluxes and surface characteristics over a cultivated area in Benin: daily and seasonal dynamics. *Hydrology and Earth Systems Science*, 18, 893 – 914, 2014.

#### 2013

Kounouhéwa, B., **O. Mamadou**, G. Koto n’Gobi and C.N. Awanou Dynamics and Diurnal Variations of Surface Radiation Budget over Agricultural Crops Located in Sudanian Climate ». *Atmospheric and Climate Sciences* 03, no 01 (2013): 121 31.

#### Conference Papers

**Mamadou Ossénatou**, Galle S., Cohard J-M., Seghieri J., Peugeot C., Kounouhéwa B. and C. N. Awanou. Saisonnalité des flux d’énergie en surface d’une zone cultivée en climat soudanien (Bénin, Afrique de l’Ouest). Actes du 26<sup>ième</sup> Colloque International de l’Association Internationale de Climatologie, 3-7September 2013, pp 366-371.

Koto N’Gobi, G., Médard Agbazo, **Mamadou Ossénatou**, et Koffi Togbénu. « Intrinsic Mode Functions and Fractal Characteristics of the Solar Incoming Shortwave Radiation Observed at Nalohou (Benin Republic) ». *Journal de Physique de La SOAPHYS* 1, n° 1 (30 décembre 2019): C19A7-1-C19A7-7. <https://doi.org/10.46411/jpsoaphys.19.01.007>.

#### PRESENTATIONS

**Ossénatou Mamadou** et al. “Turbulent Kinetic Energy and turbulence dispersion characteristics over a mixed crop area in Benin” at the First International Conference on Air Quality in Africa

(ICAQ'AFRICA2022) hosted online by the CERN, the European Centre for Nuclear Research on 11th – 14th October, 2022

**Ossénatou Mamadou** et al. “DangboFlux : Un observatoire dédié à l'étude des interactions surface-atmosphère, des gaz à effet de serre et des caractéristiques turbulentes au sud du Bénin” Journées Scientifiques du Campus de Natitingou, 28-29 October 2022, Benin.

**Ossénatou Mamadou** et al. “Characterization of the oscillation in shortwave and longwave radiation using wavelet analysis” Second African conference on fundamental and applied physics, 7-11 Mars 2022, Online

**Ossénatou Mamadou:** *Energy partitioning and its underlying processes inferred by Eddy Covariance in West Africa*, Science Nonlinéaire, Dérivées Fractionnaires et Applications, 17 au 21 may 2021, IMSP/UAC/Bénin

**Ossénatou Mamadou:** *Land surface processes and Land climate interactions in West Africa*, AIMS NEI Research School on Climate Science, Feb. 2020, Kigali, Rwanda.

Agbazo, M., Koto N’Gobi, G., **Mamadou, O.**, Alamou, E., Kounouhewa, B. & Afouda A (2019): *Multifractal Characteristics of Solar Radiation Intrinsic Mode Functions Observed in Benin (West Africa)*. "1ères Journées Scientifiques du Réseau sous Régional de Recherche en Energies Renouvelables (RESER)", ISBA, 21-22 Feb.2019 Cotonou, Bénin.

**Ossénatou Mamadou**, Jean-Martial Cohard, Sylvie Galle & Basile Kounouhéwa: *Six years of heat and water vapor surface-atmosphere exchanges in West Africa: Spatial and long-term temporal analyses*, International Conference “Observatories of the Critical Zone in West Africa: Current issues and Findings”, 12-14 Nov. 2018 Niamey (Niger)

Akim M.O. Amanda, **Ossénatou Mamadou** & Basile Kounouhéwa, *Analyse comparative des caractéristiques turbulentes au-dessus d'une forêt claire et d'une culture en zone soudanienne*, International Conference “Observatories of the Critical Zone in West Africa: Current issues and Findings”, 12-14 Nov. 2018 Niamey (Niger)

Miriam Hounsou, **Ossénatou Mamadou**, Basile Kounouhewa, Sylvie Galle et Jean-Martial Cohard: *Gap filling des données manquantes du flux de chaleur latent et estimation des incertitudes associées: cas d'une culture et d'une forêt en climat soudanien (Nord du Bénin)*, International Conference “Observatories of the Critical Zone in West Africa: Current issues and Findings”, 12-14 Nov. 2018 Niamey (Niger).

Nicolini G., Aubinet M. Feigenwinter C., Heinsech B., Lindroth A., **Mamadou O.**, Moderow U., Mölder M., Montagnani L., Rebmann C., Papale D.: *Storage flux uncertainty impact on eddy covariance net ecosystem exchange measurements*. Geophysical Research Abstracts Vol. 19 EGU2017-164377, 2017, Poster.

**Mamadou O.**, Gourlez de la Motte L., De Ligne A., Heinesch B. and Aubinet M.: *Unexpected sensitivity of the annual net ecosystem exchange to the high frequency loss corrections in a grazed grassland site in Belgium*. Geophysical Research Abstracts Vol. 18, EGU2016-7017-1, 2016, Poster.

Gourlez de la Motte L., Jérôme E., **Mamadou O.**, Beckers Y., Bodson B., Heinesch B. and Aubinet M.: *Carbon balance of an intensively grazed permanent grassland in southern Belgium*. Geophysical Research Abstracts Vol. 18, EGU2016-6813-1, 2016, Poster.

Hector, B., Cohard, J.-M., Séguis, L., Boukari, M., Galle, S., **Mamadou, O.**, Peugeot, C., Quantin, G., Vischel, T., 2016. *Global changes impact on water fluxes of the critical zone for the sudanian area in West-Africa*. IAH, Montpellier, September 2016. Poster

**O. Mamadou**, Galle, S., J.-M. Cohard, C. Peugeot & J-D Ntiwunwa.: *Impact of Deforestation on Water Budget in Sudanian Climate (Benin)*. AGU Fall meeting, 14-18 Dec. 2015, San Francisco, USA (Poster).

**O. Mamadou**, Galle, S., J.-M. Cohard, C. Peugeot, J. Seghieri & B. Kounouhewa.: *Impact of deforestation on surface water and energy feedbacks in sudanian region of West Africa*. Our Common Future Under Climate Change, 07 - 11 July 2015, Paris France (Poster).



- J.-M. Cohard, C. Peugeot, F. Lohou, **O. Mamadou**, A. Boone, B. Cappelaere, J. Demarty, S. Galle, M. Grippa, F. Guichard, L. Kergoat, ALMIP2 working group. *On the ability of surface model to reproduce dependencies over West Africa: The Almip Experiments*. AGU Fall meeting, 15-19 Dec. 2014, San Francisco, USA (oral communication).
- Peugeot C, Boone A, Kergoat L, Cappelaere B, Demarty J, Grippa M, Anderson M, Awessou B, Cohard JM, Ducharne A, Eswar R, Galle S, Getirana A, Hain C, **Mamadou O**, Muddu S, Ottlé C, Richard A, Seghieri J, Séguis L, and the ALMIP group. *Model, satellite and ground-based estimates of evapotranspiration. A comparison in sub-humid tropical West Africa (Benin) within the framework of the ALMIP2 project*. AMS 94th Annual Meeting, Feb. 2014 (oral communication).
- O. Mamadou**, S. Galle, J.-M. Cohard, J. Seghieri, C. Peugeot, B. Kounouhéwa & C.N. Awanou. *Seasonality of energy fluxes over an agricultural site in sudanian climate (Benin, West Africa)*. 26<sup>ème</sup> colloque de l'Association internationale de Climatologie, 03 – 07 Sep. 2013, Cotonou (oral communication).
- O. Mamadou**: *Etude des flux d'énergie et de vapeur d'eau en climat soudanien : comportement comparé de deux couverts végétaux au Bénin*. 1<sup>er</sup> atelier de renforcement des capacités des doctorants du Sud organisé par l'Institut de Recherche pour le Développement, 23 – 25 Sep. 2013, Ouagadougou, Burkina-Faso (oral communication).
- Mamadou O.**, S. Galle, J.-M. Cohard, B. Kounouhéwa, Diedhiou A., Biron R. and Boubkraoui S. *Quality Control of Eddy Covariance Measurements in Sudanian Climate (Benin, West Africa)*, workshop on “Land Atmosphere Interactions at Regional Scale at the regional scale” 08 – 10 Oct. 2012 Madrid (Spain) poster.
- Mamadou O.**, S. Galle, J.-M. Cohard, B. Kounouhéwa, Diedhiou A., Biron R. and Boubkraoui S. *Annual and Seasonal energy budget variations of a fallow and a clear forest in sudanian climate*. 4th AMMA Int. Conf., Toulouse, 02 – 06 Jul. 2012. Poster.
- Richard A., S. Galle, M. Descloîtres, J.-M. Cohard, L. Séguis, D. Robert, **O. Mamadou**, 2012. *Hydrodynamics modelling of a cultivated catena in the watershed of Upper Oueme (North Benin)*. 4th AMMA Int. Conf., Toulouse, 02 – 06 Jul. 2012. Poster.

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## PROFESSIONAL AFFILIATIONS

American Meteorological Society, 2018-Present  
 American Geophysical Union, 2015-Present  
 Local Principal Investigator of Beninese AMMA-CATCH flux sites, 2016-Present

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## PROFESSIONAL SERVICE

**Members of Editorial Board** of the Boundary Layer Meteorology Journal  
 (<https://www.springer.com/journal/10546/editors>) **May 2023** –

**Selection Committee Member of the « 2022 OWSD-Elsevier Foundation Awards for Early Career Women Scientists in the Developing World Climate action and the environment »**

- 3 applicants reviewed in 2022

**The African Research Initiative for Scientific Excellence, Pilot Programme (ARISE-PP) application review for AAS**

- 4 applicants reviewed in 2021

**Peer-Reviewed Articles for:**

- Advance in Meteorology (1); Agricultural and Forest Meteorology (3); Biogeosciences (1) Remote Sensing (2) ; Scientific Africa (1) ; Boundary Layer Meteorology (1)

**MS4CR application review for AIMS Rwanda**

- 5 applicants reviewed in 2020

**LANGUAGES**

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**English:** Novice Speaker, Advanced Listening and Writing, Intermediate Reading

**French:** Distinguished Speaking, Listening, Reading and Writing

**Fon:** Native language

**OTHER SKILLS AND COMPETENCES**

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Operating system: UNIX, LINUX, Windows

Word Processing: Microsoft Word, Excel, Powerpoint, Zotero

Computer languages: R and Visual Basic (advanced), Matlab and Python (Beginning)

Scientific softwares: EdiRe, Eddyflux, EddySpec, Inkscape

**OTHER**

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Programming, Reading and Documentaries, Running.

## REFERENCES

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**Prof. Marc Aubinet**, Honorary Professor – Retired  
Department of Physics, Biosystems Dynamics and Exchanges Unit  
University of Liege, Gembloux Agro Bio-Tech (Belgium).  
Phone: (32) 496 69 52 96  
Email: [marc.aubinet@uliege.be](mailto:marc.aubinet@uliege.be)  
Relationship: Advisor of my Postdoctoral Research

**Prof. Basile Kounouhéwa**, Full Professor  
Department of Physics, Director of the ‘Laboratoire de Physique du Rayonnement’  
University of Abomey-Calavi (Bénin)  
Phone: +229 97 22 46 38  
Email: [kbbasile@gmail.com](mailto:kbbasile@gmail.com)  
Relationship: Director of my laboratory namely ‘Laboratoire de Physique du Rayonnement’ and  
Local Mentor of my research

**Dr. Sylvie Galle**, Senior Researcher  
Institut des Géosciences de l'Environnement  
University of Grenoble Alpes (France)  
Phone: +33 04 76 51 47 43  
Email: [sylvie.galle@ird.fr](mailto:sylvie.galle@ird.fr)  
Relationship: Supervisor of my PhD Thesis