



Nkongho Ayuketang,
Arreyndip

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Alexander von Humboldt ICP Postdoctoral Fellow and Climate Reality Leader

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CIVIL STATUS

Surname: Nkongho **Name:** Ayuketang Arreyndip
Date and Place of Birth: 26/10/1988 Ossing-Mamfe **Nationality :** Cameroonian
Sex : Male **Marital Status :** Single **First Language :** English
Profession : Climate Impact Researcher
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Research Interest

Climate system dynamics, Economic impacts of climate extremes, Extreme climate events analysis, Adaptation and mitigation strategies of climate change, Climate change impacts in agriculture, Sustainable agriculture, Sustainable development, Renewable energy, Rural and urban electrifications, Environmental science.

Education

- 2020–present **Alexander von Humboldt ICP Postdoctoral Fellow**, *Potsdam Institute for Climate Impact Research (PIK)*, Potsdam, Germany.
Specialized in Assessing global economic impacts of climate-related disasters on regional and global economic sectors.
- 2014–2019 **Ph.D Physics**, *University of Buea*, Buea, Cameroon.
Specialized in nonlinear processes in Renewable energy

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- 2013–2014 **Masters Degree in Mathematical Science**, *African Institute for Mathematical Science (AIMS), Cameroon*, Limbe, Cameroon.
Specialized in dynamical system analysis of Hamiltonian Ratchets
- 2012–2014 **M.Sc Physics**, *University of Buea*, Buea, Cameroon.
Specialized in Extreme Climatic Events Modeling
- 2008–2011 **B.Sc Physics**, *University of Buea*, Buea, Cameroon.
- 2006–2008 **G.C.E Advance Level**, *Cameroon College of Arts and Science (CCAS) Kumba*, Kumba, Cameroon.

Ph.D Thesis

Title *Complete Onshore Wind Farm Project in Cameroon: Modelling, Simulations and Comparative Analysis.*

Supervisors Professor Dikande Alain Moise & Senior Lecturer Ebobenow Joseph

Description This thesis is a scientific contribution towards the installation of the first ever onshore wind farm in Cameroon. Methods employed are: wind resource assessment models; Wind turbine structural and gearbox modeling; Wind farm layout optimization modeling.

M.Sc Physics Thesis

Title *Modelling Extreme Temperature in Mbonge, Cameroon Using Generalized Extreme Value Distribution.*

Supervisors Professor Dikande Alain Moise & Senior Lecturer Ebobenow Joseph

Description Generalized extreme value distribution models was employed to model extreme temperature conditions in Cameroon. The return level analysis was carried out to predict future temperature values. Time series analysis shows an increasing trend but with an upper bound.

M.Sc Mathematical Science Thesis

Title *Directed Transport of Particles Driven by Two-Colour Lasers.*

Supervisors Professor Kenfack Anatole

Description The ratchet effect of cold atoms in periodically symmetric and asymmetric optical ratchet double-well potential was studied under broken symmetry by bi-chromatic AC fields.

Conference/Workshop

- 1 Climate Reality Leadership Corps 2020. Trained by the USA former Vice President Al Gore. www.ClimateRealityProject.org
- 2 AIMS-Volkswagen Stiftung Workshop on Introduction to Orthogonal Polynomials and Applications. Co-organized by The African Institute for Mathematical Sciences(AIMS)Cameroon and The University of Kassel, Germany, Funded by Volkswagen Stiftung. Douala, Cameroon, October 5-12, 2018. <http://aims-volkswagen-workshops.org/>
- 3 AIMS-Volkswagen Stiftung Workshop on Introduction to Computer Algebra and Applications.

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Co-organized by The African Institute for Mathematical Sciences(AIMS)Cameroon and The University of Kassel, Germany, Funded by Volkswagen Stiftung. Douala, Cameroon, October 6-13, 2017. <http://aims-volkswagen-workshops.org/2017/home.html>

AWARDS

- Alexander von Humboldt ICP Postdoctoral Fellowship 2020.
- AIMS Alumni Small Research Grant winner from the Government of Canada's International Development Research Centre (IDRC) and within the framework of the AIMS Research for Africa Project. April 2016.
- Scholarship winner for a M.Sc program in Mathematical Sciences.
- 9th excellent award at the G.C.E Ordinary levels awarding body(Manyu Solidarity Foundation)
- 11th excellent award at the G.C.E Advanced levels awarding body(Manyu Solidarity Foundation)

Professional Experience

Graduate Teaching Assistant, Polytechnic, Saint Jerome Catholic University Institute of Douala, Cameroon (Nov-2014 to date). .

Job Description:

- Lecturer of the courses; Electrostatics, Geometrical Optics and Thermodynamics 1 and 2 for 1st year and 2nd year engineering students.
- Controls and supervises tutorial for the course "Vibrations of structures" in Masters 1 with Mechatronics option.
- Administers Continues Assessments and correct scripts
- Provides general assistance to the academic director and the lecturers with the academic programme.

Former Job

Worked as a High School Physics teacher and Laboratory master in Saker Baptist College Limbe-Cameroon <http://sakerlimbe.org/Sab2013c/> (from August 28, 2012 to October 6, 2013).

Job Description:

- Set-up, and coordinates Physics laboratory practicals
- Main classroom Physics teacher for Form 3, Form 5, Lower-Sixth and Upper-Sixth

Competence

- Mathematical Modelling of Physical Systems using Matlab, Python, Sage, Maxima, Gap, CFD code.
- Skills in Statical Analysis of large data sets using R-studio.
- Skills in teaching and pedagogy.

Hobby

Football, also passionate for singing and dancing

Publications

[1] Nkongho Ayuketang Arreyndip, Ebobenow Joseph, "Small 500 kW onshore wind farm project in Kribi, Cameroon: Sizing and checkers layout optimization model", Energy Reports, ISSN: 2352-4847,

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Vol: 4, Page: 528-535, 2018, <https://doi.org/10.1016/j.egy.2018.08.003>

[2] Ayuketang Arreyndip, Nkongho; Moise Dikande, Alain; Joseph, Ebobenow. 2018. "Nonlinear Multi-Frequency Dynamics of Wind Turbine Components with a Single-Mesh Helical Gear Train." *Math. Comput. Appl.* 23, no. 1: 12. doi:10.3390/mca23010012

[3] D. Afungchui, J. Ebobenow, N. N. Rene, N. A. Arreyndip, Global Solar Radiation of some Regions of Cameroon using the Linear Angstrom Model and Non-linear Polynomial Relations: Part 2, Sun-path Diagrams, Energy Potential Predictions and Statistical Validation, *International Journal of Renewable Energy Research, IJRER*, Vol. 8, No. 1, March, 2018. Online ISSN: 1309-0127

[4] Arreyndip Nkongho Ayuketang, Joseph Ebobenow, David Afungchui "Wind Energy Assessment of Cameroon's Coastal Regions for the Future Installation of a Wind Farm", Volume 2, Issue 11, November 2016, Article e00187 <http://dx.doi.org/10.1016/j.heliyon.2016.e00187>.

[5] Nkongho Ayuketang Arreyndip and Ebobenow Joseph, "Generalized Extreme Value Distribution Models for the Assessment of Seasonal Wind Energy Potential of Debuncha, Cameroon," *Journal of Renewable Energy*, vol. 2016, Article ID 9357812, 9 pages, 2016. doi:10.1155/2016/9357812

[6] Nkongho Ayuketang Arreyndip, "Comparing the Ratchet Effects of Cold Atoms in Periodically Symmetric and Asymmetric Optical Potentials," *Physics Research International*, vol. 2015, Article ID 706527, 7 pages, 2015. doi:10.1155/2015/706527.

[7] Ayuketang Arreyndip, Nkongho; Joseph, Ebobenow. 2018. "Small Onshore Wind Farm Project in Kribi: A contribution towards the installation of the first Onshore wind farm in Cameroon." Under review in *Energy Reports*, Elsevier.

[8] Ayuketang Arreyndip, Nkongho; Moise Dikande, Alain; Joseph, Ebobenow. 2018. "Comparison of the effectiveness of two belt-drive train models of small wind turbine gearbox for low wind speeds Applications." submitted to *Applied Mathematical Modelling*, Elsevier.

Conference papers

[1] Nkongho Ayuketang Arreyndip, Joseph Ebobenow, "Extreme Temperature Forecast in Mbonge, Cameroon through Return Level Analysis of the Generalized Extreme Value (GEV) Distribution", *World Academy of Science, Engineering and Technology*, Vol:9 2015-09-05.

[2] Nkongho Ayuketang Arreyndip, Joseph Ebobenow, "A Stochastic Approach to Extreme Wind Speeds Conditions on a Small Axial Wind Turbine", 17th International Conference on Energy and Environment to be held in London, United Kingdom on August, 20-21, 2015.

Stand: 28th of July, 2020

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Climate reality leader

Research Domain IV: Complexity Science

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