

Curriculum Vitae (CV)

AMABAYO EMIRANT BERTILLAS

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SUMMARY

I am a Ugandan Physicist with a PhD in Physics, and with at least six years of university teaching experience. I have offered the following courses so far: At Undergraduate; Atomic physics, Nuclear Physics, Solid State Physics, Geophysics, Statistical Mechanics, Quantum Mechanics, Waves and Optics, Mathematical Physics, Space Sciences and Astrophysics, and at Masters; Advanced classical Mechanics, Advanced Quantum Mechanics, Advanced Statistical Mechanics, Research Methods in Physics, Advanced Space Science and Computational Physics.

I have participated and presented papers in international conferences. I am involved in supervising student projects or research at both undergraduate and postgraduate levels. I have also participated in review of publications with journals like Elsevier Journal. Outside teaching, I organize or attend outreach programs, and offer services inform of sensitization to the community on Science and Technology Education.

I have been an external examiner in Mbarara University of Science and Technology, and Makerere University. My aim is to serve humanity through teaching, training and mentoring of the next generation of scientists, engineers, teachers and technicians for a better society.

EDUCATION BACKGROUND:

- 2013 – 2015: Doctor of Philosophy (Physics)
Mbarara University of Science and Technology
- 2010 – 2011: Masters of science in Physics (with distinction)
Rhodes University
- 2010 (Jan - Jun): MSc course work
University of Cape Town
- 2009: Bachelor of Science (Hons) in Astrophysics and Space Science
University of Cape Town
- 2001 – 2004: Bachelor of Science with Education (Hons)
Mbarara University of Science and Technology

Academic Awards/Scholarships

- 2013-2015: Mbarara University of Science and Technology
German Academic Exchange Service (DAAD), Germany award for pursuing PhD in Physics
- 2010-2011: Rhodes University
National Astrophysics and Space Science Programme (NASSP), South Africa award for pursuing Master of Science in Physics
- 2009: University of Cape Town
National Astrophysics and Space Science Programme (NASSP), South Africa award for pursuing Bachelor of Science in Astrophysics and Space Science

2003-2004: Mbarara University of Science and Technology

Kulika Charitable Trust award for pursuing Bachelor of Science with Education

PROFESSIONAL AND WORK EXPERIENCE

Employment History

July 2017-to date:	Senior Lecturer, Department of Physics, Busitema University
Feb 2013-to June 2017:	Assistant Lecturer, Department of Physics, Busitema University
Feb 2012-to 2013:	Lecturer, Department of Physics, Kabale University
Feb 2006-to 2007:	Part time Lecturer, Department of Physics, Kampala International University-Western Campus
Feb 2006-to 2007:	Acting Lecturer, Department of Physics, National Teachers' College Muni
Feb 2006-to 2007:	Education officer, Department of Physics and Mathematics, St. Joseph's College Ombaci

External Examination

Appointed as External examiner at Mbarara University of Science and Technology for the MSc thesis of Mr. Sarathiel Tuyizere. Thesis title: **Characterisation and Analysis of Ionospheric Response to Solar Transients Associated with Solar Radio Bursts.**

Appointed as External examiner at Makerere University for the MSc thesis of Mr. Francis Twinomugisha. Thesis title: **Total Electron Content Prediction in Low Latitude Region of East Africa Using Nequick2 model.**

Appointed as External examiner at Makerere University for the MSc thesis of Mr. Lugonvu Geofrey. Thesis title: **Comparison of Ionospheric Scintillations during Storm and Non-Storm period over the East African Region using GPS and Ionosonde Data.**

Appointed as External examiner at Mbarara University of Science and Technology for the MSc thesis of Mr. Eliazah Andama. Thesis title: **The Effect of Equatorial Electrojet on Scintillation Occurrence over East African Region.**

Appointed as External examiner at Mbarara University of Science and Technology for the Undergraduate Examinations for semester II of 2020/2021 Academic Year.

Appointed as External examiner at Mbarara University of Science and Technology for the Undergraduate Examinations for semester II of 2021/2022 Academic Year.

Graduate Student Training

Mbarara university of Science and Technology:

Geoffrey Andima: title of dissertation: "Statistical Analysis of Total Electron Content Perturbations and Travelling Ionospheric Disturbances over the Ugandan Region" Year of completion Jan 2015

Mbarara university of Science and Technology:

Valence Habyarimana: title of dissertation: "Determination of Geomagnetically Quiet Time Disturbances Over Uganda During the Beginning of Solar Cycle 24" Year of completion Jan 2015

Mbarara university of Science and Technology:

Joseph Chaka Tumwine: title of dissertation: “Analysis of Ionospheric Disturbances During Geomagnetic Storm Conditions Over Uganda” Year of completion Jan 2016

Mbarara university of Science and Technology:

Bayo Robert: title of dissertation: “A Study of the Correlation between Total Electron Content and some selected Meteorological Factors over Mbarara” Year of completion 20

Mbarara university of Science and Technology:

Paschal Oleni: title of dissertation: “Determination of Joint Statistics of Scintillation on Multiple Satellite Links” Year of completion May 2022

Busitema University:

Gabriel Modo: title of dissertation: “Determination of Chemical Abundance of Hd73574 and Bd+19°2045” Year of completion June 2022

Busitema University:

Atino Doris Eggo: title of dissertation: “Gaia and Kepler Observations of NGC 6811” Year of completion June 2022

Mbarara university of Science and Technology:

Geoffrey Andima: title of dissertation: “Modeling the African Low Latitude Ionospheric Scintillation” Year of completion Jan 2019

Mbarara university of Science and Technology:

Faustine Abiriga: title of dissertation: “Assessing the Impact of Equatorial Plasma Bubbles on the Performance of GNSS Applications” Year of completion May 2022

Publications

1. Amabayo E. B., Lee-Anne. M and Pierre C. J

Statistical characterisation of spread F over South Africa

Journal of Advances in Space Research 48 (2011) 2043–2052

2. Amabayo E. B., Lee-Anne. M and Pierre C. J

Ionospheric response over South Africa to the geomagnetic storm of 11-13 April 2011

Journal of Atmospheric and Solar-Terrestrial Physics 84–85 (2012) 62–74

3. Amabayo E. B. and Pierre C. J

Multi-station observation of ionospheric irregularities over South Africa during strong geomagnetic storms

Journal of Advances in Space Research 48 (2013) 2043–2052

4. Amabayo E. B., Jurua. E., Pierre C.J and Habarulema J. B

Climatology of Ionospheric Scintillations and TEC trend over the Ugandan region

Journal of Advances in Space Research 53 (2014) 734 -743

5. Amabayo E. B., Anguma S. Katrini and Jurua E

Tracking the Ionospheric Response to the Solar Eclipse of November 03, 2013

International Journal of Atmospheric Sciences 2014 (2014) 1-10

6. Amabayo E.B., Jurua. E and Cilliers P. J:

Validating the use of Scintillation Proxies to Study Ionospheric Scintillation over the Ugandan Region

Journal of Atmospheric and Solar-Terrestrial Physics 128 (2015) 84-91

7. Andima. G, Jurua. E, **Amabayo E.B.**, Habarulema. J. B
Statistical analysis of TEC perturbations over a low latitude region during 2009-2013 ascending solar activity phase
Journal of Advances in Space Research 56 (2015) 2542-2551
8. **Amabayo E.B.**, Jurua. E and Cilliers P. J:
Assessment of scintillation proxy maps for a scintillation study during geomagnetically quiet and disturbed conditions over Uganda
Journal of Atmospheric and Solar-Terrestrial Physics 154 (2017) 47-54
9. Andima. G, **Amabayo E.B.**, Jurua. E and Cilliers P. J:
Characterization of the low latitude plasma density irregularities observed using C/NOFS and SCINDA data
Journal of Advances in Space Research 61 (2018) 264-273
10. Andima. G, **Amabayo E.B.**, Jurua. E and Cilliers P. J:
Modeling and trends of GPS total electron content over the African low latitude region using empirical orthogonal functions
Journal of Annales Geophysicae 37 (2019) 65-76
11. Andima. G, **Amabayo E.B.**, Jurua. E and Cilliers P. J:
GPS derived amplitude scintillation proxy model: A case over a low latitude station in East Africa
Journal of Atmospheric and Solar–Terrestrial Physics 211 (2020) 105-461
12. Abiriga. F, **Amabayo E.B.**, Jurua. E and Cilliers P. J:
Statistical characterization of equatorial plasma bubbles over East Africa
Journal of Atmospheric and Solar-Terrestrial Physics 200 (2020) 105-197
13. **Amabayo E.B.**, Andima. G, and Senyunzi R.C:
Instantaneous Ionospheric Scintillation Mapping over the East African Region by use of GPS Derived Amplitude Scintillation Proxy
Asian Journal of Research and Reviews in Physics 4/2 (2021) 6-20
14. Abiriga. F, **Amabayo E.B.**, Jurua. E and Cilliers P. J:
Investigation of the impact of Ionospheric Scintillation on GNSS Performance over East Africa
Journal of Advances in Space Research 68 (2021) 2876 –2889
15. Senyunzi R.C, Andima. G, **Amabayo E.B.** and Eugenio Realini
Performance of ray-traced VMF3 products in retrieving Zenith Tropospheric Delay over the African tropical region
Journal of Atmospheric and Solar-Terrestrial Physics 243 (2023) 106014
16. Abudallah Tagumira, Saphina Biira and Emirant Bertillas Amabayo
Concentrations and human health risk assessment of selected heavy metals in soils and food crops around Osukuru phosphate mine, Tororo District, Uganda
Journal of Toxicology Reports xxx (xxxx) 1-7

UNIVERSITY AND COMMUNITY SERVICES

Representative of Busitema University to the task force committee for the establishment of National Space Programme for Uganda

Academic Staff Representative to the 4th Council of Busitema University 2020-2024

Head of Department, Physics at Busitema University from 2019 to date

Acting Head of Department, Physics at Busitema University from 2016 to 2019

Member of programme and curriculum review committee at the Faculty of Science and Education

Organized outreach with theme “100 Hours of astronomy global event between 10th and 12th January 2019 at Hotel Meritoria, Tororo Municipality” to mark anniversary celebration of astronomy

Organized Stakeholder engagement meeting on space science institute research on space weather prediction model on 30th November 2022 at Nagongera

ATTENDANCE OF CONFERENCES, WORKSHOPS, SEMINARS

2011: Attended the South African Institute of Physics (SAIP) conference at University of South Africa (UNISA)

Presentation title “Statistical characterization of spread F over South Africa”

2015: Attended the African Workshop on Space Science Research, conference at Hermanus, South Africa

Presentation title “Assessment of scintillation proxies for a climatology study during geomagnetically quiet and disturbed conditions over a low latitude region”

Names and Addresses of my Referees:

- i. Assoc. Prof. Edward Jurua
Head of Physics Department in the Faculty of Science,
Mbarara University of Science and Technology
P.O Box 1410, Mbarara (Uganda)
E-mail : ejurua@gmail.com
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- ii. Prof. Pierre .J. Cilliers
South African National Space Agency (SANSA)
P.O Box 32, Hermanus (South Africa)
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E-mail : pjcilliers@sansa.org.za
- iii. Dr. Andama Edward

Dean Faculty of Science and Education
Busitema University, Nagongera Campus
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Declaration

I **Dr. Emirant Bertillas Amabayo** do hereby certify that the information provided herein is true and accurate to the best of my knowledge and I understand that any false information detected will lead to my being disqualified.

Thank you.



Dr. Amabayo Emirant Bertillas (PhD)
Name

February 1st, 2023
Date