

CURRICULUM VITAE

1. Personal Data

Name: Cláudio Moisés Paulo.

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Place and Date of Birth: Beira, 30th of Agosto of 1979.

Gender: Male.

Civil Status: Married.

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2. Academic Formation

- **1986-1990:** 1st to 5th Grade, Primary School Heróis Moçambicanos, Beira-Mozambique.
- **1991-1992:** 6th a 7th Grade, Secondary School Mateus Sansão Mutemba, Beira-Mozambique.
- **1993-1995:** 8th a 10th Grade, Secondary School Samora Moisés Machel, Beira-Mozambique.
- **1996-1997:** 11th a 12th Grade, Anglican School São Cipriano, Maputo-Mozambique.
- **1998-2003:** Honours Degree in Physics and Metereology, *The Influence of Rainy Season Length on Corn Crop Production on the Southern Side of the Save River in Mozambique*, Universidade Eduardo Mondlane, Maputo-Moçambique.
- **2007:** Honours Degree in Astrophysics and Space Science, *High-Mass Star Formation. A Search of 12-GHz Methanol Maser and 22-GHz Water Maser Towards 6.7-GHz Methanol Maser*, University of Cape Town, Cape Town-South Africa.

- **2008-2010:** MSc, *Radio-optical analysis of extended radio sources in the First Look Survey field*, University of the Western Cape, Western Cape-South Africa.
- **2013-2019:** PhD, *The properties of radio relics and the connection with radio halos in galaxy cluster and their correlation with non-thermal phenomena at multi-frequency*, University of Witwatersrand, Johannesburg-South Africa.

3. Actual Professional Activities

- Senior Lecturer, Lecturer and Research, Universidade Eduardo Mondlane, Faculty of Science, Department of Physics, March of 2004 to Present Moment, Maputo-Mozambique.

4. Pedagogical Ability

4.1. Lecturers

- **2004-2019:** Involved in theoretical, practical and laboratory classes at Eduardo Mondlane University, Maputo-Mozambique.
 - **Subjects:** Physical Meteorology, Atmosphere-Ocean Interaction, Hydrology, Agrometeorology, Basic Physics, Applied Physics, Biophysics, General Meteorology, Introduction to Astronomy and Astrophysics, General Oceanography, Climatology, Technologies for Environmental Comfort and Service Systems I, Geodetic Astronomy, and Molecular Physics Laboratory.
- **2008-2010:** Involved in outreach at the University of Western Cape, Cape Town, South Africa.
- **2013-2016:** Involved in practical and laboratory classes at the University of Witwatersrand, Johannesburg-South Africa
 - **Subjects:** General Physics, Introduction to Astronomy, Cosmology: The Origin and Evolution of the Universe, Modern Astrophysics I, and Relativity: The Basis of Cosmology and Astrophysics III.

4.2. Student Supervision

- **2017-2018:** Supervision of Honours Projects at Universidade Eduardo Mondlane.

Number	Student	Year	Topic
1	Bento Cambula	2005	Relationship Between Precipitation Variability, Temperature, Altitude And Cholera Cases In Mozambique
2	José Sawanguane	2005	Precipitation Distribution and Its Influence on Corn Crop in Mozambique
3	Anacleta Botão	2006	Estimating Nhemba Bean Yields Using Mozambique's Water Requirements Satisfaction Index
4	Yonss José	2006	Study of the Effect of Turbulence on Micro-Algae Cultivation in Chuabo Dembe-Quelimane
5	Edna Machavane	2007	Frequency and Magnitude Assessment of Precipitation Extremities in Mozambique
6	Sheila Lamurgo	2010	Frequency and Magnitude Assessment of Temperature Extremities in Mozambique
7	Laurinda da Cruz	2011	Air Temperature Variability and its Impact on Malaria in Maputo City
8	Genethe Roque	2012	Influence of El-Nino Southern Oscillation (ENSO) on Air Temperature in the South Zone of the Country
9	Moisés Macambaco	2012	Impact of Climate Change on Corn Crops in Northern Mozambique
10	Esménio Macassa	2012	Impact of Climate Change on Water Resource Management in Mozambique: Case of the Incomati Basin
11	Nilsa Matsinhe	2013	Chókwè District Soil Water Index Assessment
12	Hanustúrio Cossa	2018	Relationship Between Precipitation and Corn Crop Agricultural Production in Xai-Xai District
13	Orlando Feniase	2018	Occurrence of Fog: Case Study at Maputo, Beira and Nampula Airports

5. Scientific Activities and University Extension

5.1. Project Coordinations

- **2009:** Celebration of the International Year of Astronomy in Mozambique, Funded by the International Union of Astronomy, (5,000.00 Euros), <https://www.iau.org>
- **2009-2015:** Galileo Teacher Training Program in Maputo City, Beira and Chimoio, Funded by the OAD-Office of Astronomy Development (15,000.00 Euros), <https://www.astro4dev.org>
- **2009-2019:** Universe Awareness Program in Maputo City, Beira and Chimoio, Funded by the OAD-Office of Astronomy Development (7,000.00 Euros), <https://www.astro4dev.org>
- **2016:** JEDI - Joint Exchange Development Initiative, 21-30 September, Gaza, Bilene Beach, Funded by OAD and Newton Foundation, (20,000.00 Euros) **2017:** Assembly of the Astrophysics & Space Sciences Laboratory at the Department of Physics, Eduardo Mondlane University, Funded by the Department of Science and Technology of South Africa and the DARA Development in Africa with Radio Astronomy project, (50,000.00 Euros)
- **2017-2021:** DARA, Funded by the Newton Foundation, (200,000.00 Euros), <https://www.dara-project.org> 2019-2021: DOPPLER-Development of PaloP KnowLEdge in Radio Astronomy, Funded by Aga Khan Development Network and the Portuguese Science and Technology Foudation, (70,000.00 Euros), <http://doppler.av.it.pt>

5.2. Publications

1. S. Colafrancesco, P. Marchegiani and **C. M. Paulo**, 2017. MNRAS 471, 4747-4759

The correlation between radio power and Mach number for rádio relics in galaxy clusters

2. **Paulo C. M.**, Colafrancesco S., and Marchegiani P., 2017. Proceedings, 4th Annual Conference on High Energy Astrophysics in Southern Africa (HEASA 2016): Cape Town, South Africa, August 25-26, 2016

The origin of rádio relics in galaxy clusters: a combined gamma and rádio wavelength analysis

3. Barbosa, D., Bergano, M., Ribeiro, V. A. R. M., Loots, A., Thondikulam, V. L., Gaylard, M. Van Ardene, A. **Paulo, C.**, Colafrancesco, S., Amador, J. C., Maia, R., & Melo, R. 2013. Proceedings of the URSI BEJ Session 'Large Scale Science Projects: Europa-Africa Connets', IEEE Africon 2013 Conference in Maurícias, arXiv: 1311.4464

Design, environmental and sustainability constrain of new African observatories: The exemple of the Mozambique Radio Astronomy Observatory

4. Ribeiro, V. A. R. M., **Paulo, C. M.**, Besteiro, A. M. A. R., Geraldés, H., Maphossa, Society and Culture, Valls-Gabaud, D. And Boksendberg, A. (eds.) IAUS 260, 522

Introducing Astronomy into Mozambique Society

5. **C. M. Paulo**, I. Prandoni, R. Morganti, and C. M. Cress. August 2010. Proceedings of the International Astronomical Union 267(S267): 131-131. DOI: 10.1017/S1743921310005922

Radio-optical Analysis of Extended Radio Sources in the First Look Survey Field

5.3. Participation in Workshops and Conferences

- Teaching Methods, Universidade Eduardo Mondlane, August 18-27, 2004, Maputo-Mozambique.
- Students Evaluation Methods, Universidade Eduardo Mondlane, 27 September to 8 October, 2004, Maputo-Mozambique.
- Scientific Research Methodologies I, Universidade Eduardo Mondlane, December 6-10, 2004, Maputo-Mozambique.
- Scientific Research Methodologies II, Universidade Eduardo Mondlane, June 13-22, 2005, Maputo-Mozambique.
- Research Seminary of Universidade Eduardo Mondlane, Universidade Eduardo Mondlane, September 20-22, 2005, Maputo- Mozambique.
- Research Policy I and II of Universidade Eduardo Mondlane, Universidade Eduardo Mondlane, July 19, 2006, Maputo-Mozambique.
- Design of Mozambique Emergency Operations Room, August 9-10, 2006, Maputo-Mozambique.
- 33rd Annual International Conference of the Southern African Society for Education, University of Southern Africa, October 5-7, 2006, Pretoria-South Africa.
- South African SKA and KAT Human Capital Development Programme Bursary Conference 2006: Growing Southern African Multi-Wavelength Astronomy, 28 November to 1 December, 2006, Cape Town-South Africa.
- 52nd Annual Conference of the South African Institute of Physics (SAIP), University of the Witwatersrand, July 2-6, 2007, Joannesburg-South Africa.
- 2nd Annual Postgraduate Bursary Conference of South African SKA and KAT project, November 26-30, 2007, Cape Town-South Africa.
- Cosmic Microwave Background power spectrum estimation and Sunyaev-Zel'dovich cluster extraction in lighth of point source contamination in microwave maps workshop, March 21, 2008, Cape Town-South Africa.
- Annual Research Open day for Post Graduate Students, October 28-29, 2008, Cape Town-South Africa.
- 3rd Annual Postgraduate Bursary Conference of South African SKA and KAT Project, December 01-05, 2008, Stellenbosh-South Africa.

- XXVII General Assembly of the International Astronomy Union, August 3-14, 2009, Rio de Janeiro-Brazil.
- 4th Annual Postgraduate Bursary Conference of South African SKA and KAT Project, December, 2009, Stellenbosh-South Africa.
- Closing Ceremony of the International Year of Astronomy, University of Padova, February 9-10, 2010, Padova-Italy.
- Galileo Teacher Training Program, March 22-26, 2010, Coimbra-Portugal.
- Presentation Seminar on the Establishment of a Climate Research and Risk Management and Assessment Center (CLICAR) in Mozambique, September 13, 2010, Maputo-Mozambique.
- Capacity Development in SKA Science and Engineering in Africa, May 16-21, 2011, Northern Cape, Carnavon-South Africa.
- 6th Meeting of the SKA African Partner Countries Working Group, June 21, 2011, Pretoria-South Africa.
- 4th Steering Committee Meeting of the SKA African Countries, June 22, 2011, Pretoria-South Africa.
- Project Proposal, University of Witwatersrand, August 22, 2013, Johannesburg-South Africa.
- How to Manage your Supervisor, University of Witwatersrand, August 28, 2013, Johannesburg-South Africa.
- Conferencing, University of Witwatersrand, September 13, 2013, Johannesburg, South Africa.
- 2013 Postgraduate Bursary Conference, November 25-29, Stellenbosh-South Africa.
- Development of an African Space Strategy, December 19-20, 2013, Johannesburg-South Africa.
- Eclipse 2013: History and Science in the Prince, December 2-11, 2013, Sao Tome and Principe.
- Paper Writing, University of Witwatersrand, March 26-28, 2014, Johannesburg-South Africa.
- The 59th Annual Conference of the SA Institute of Physics, July 7-11, 2014, Johannesburg-South Africa.
- The 2014 SKA Postgraduate Bursary Conference, December 7, Stellenbosh-South Africa.
- African Union Working Group on Space Meeting and Validation workshop on the African Space Policy and Strategy, December 8-10, 2014, Brazzaville-Republic of Congo.
- African SKA Partners Meeting, November 3-4, 2016, Namibia.

- The 2017 DARA Annual Network Meeting, March 27-29, Muldersdrift-South Africa.
- CHPC - DARA Linux and Python Training Partnership, Universidade Eduardo Mondlane, November 30 to December 3, 2017, Maputo-Mozambique.
- The 2018 DARA Annual Network Meeting, 2-4 May, Muldersdrift-South Africa
- The 2018 SKA Postgraduate Bursary Conference, 26-30 November, Port Elizabeth-South Africa.
- The Astronomy in Africa Business Meeting, March 25-26, 2019, Cape Town, South Africa.
- The 2018 DARA Annual Network Meeting, June 3-5, Muldersdrift-South Africa.
- Edtech-UEM series of workshop, Increase and Effective Use of ICT for Research, Teaching and Learning enable and sustained through modernization of ICT Training, Support System and Infrastructures, March-August, 2019, Maputo-Mozambique.

5.4 Conference Presentations

- Analysis of the Distribution of Precipitation and Its Influence on Corn Culture in Mozambique between 1973-2004, IV Research Seminar of Eduardo Mondlane University, 20-22 September, 2005, Maputo-Mozambique.
- Relationship between Precipitation Variability, Temperature, Altitude and Incidence of Cholera Cases in Mozambique, 4th Research Seminar of Eduardo Mondlane University, September 20-22, 2005, Maputo-Mozambique
- Preliminary Study of the Relationship between Variability of Precipitation, Temperature, Altitude and Cholera cases in Mozambique, 33rd Annual International Conference of the Southern African Society for Education, University of South Africa, University of Uniza, 5-7 October, Pretoria-South Africa, 2006.
- Deep radio survey of the Spitzer Space Telescope FLSv Region with 1.4 GHz VLA, 610 MHz GMRT, 3rd Annual Postgraduate Bursary Conference of South African SKA and KAT Project, December 1-5, 2008, Stellenbosh-South Africa.
- Radio-optical analysis of extended radio sources in the First Look Survey field, 4th Annual Postgraduate Bursary Conference of South African SKA and KAT Project, December, 2009, Stellenbosh-South Africa.
- Introducing Astronomy Into Mozambique Society, Closing Ceremony of the International Year of Astronomy, February 9-10, 2009, Padova-Italy.
- Radio-optical analysis of extended radio sources in the First Look Survey field, Eduardo Mondlane University, July 12-16, 2010, Maputo-Mozambique.
- Introducing Astronomy Into Mozambique Society, Workshop: Capacity Development in SKA Science and Engineering in Africa, May 16-21, 2011, Northern Cape, Carnavon-South Africa.

- Mozambique Radio Astronomy Observatory, 6th Meeting of the SKA African Partner Countries Working Group, June 21, 2011, Pretoria-South Africa.
- How to Introduce Astronomy into CPLP Using OAD as Leverage: The Case of Africa, Eclipse 2013: History and Science in the Prince, December 2-11, Sao Tome and Principe.
- The properties of Radio Relics in Galaxy Clusters, 2013 Postgraduate Bursary Conference, 25-29 November, Stellenbosh-South Africa.
- The properties of Radio Relics in Galaxy Cluster, The 59th Annual Conference of the SA Institute of Physics, 7-11 July, 2014, Johannesburg-South Africa.
- Astronomy in Mozambique, African SKA Partners Meeting, 3-4 November 2016, Windhoek-Namibia.
- Astronomy Activities in Mozambique, The 2017 DARA Annual Networking Meeting, March 27-29, Muldersdrift-South Africa.
- Astronomy Activities in Mozambique, The 2018 DARA Annual Networking Meeting, 2-4 May, Muldersdrift-South Africa.
- The properties of Radio Relics in Galaxy Cluster, The 2018 SKA Postgraduate Bursary Conference, 26-30 November, Port Elizabeth-South Africa.
- Astronomy Contribution for the Development of Mozambique, The Astronomy in Africa Business Meeting, 25-26 March, 2019, Cape Town, South Africa.
- Astronomy Activities in Mozambique, The 2019 DARA Annual Networking Meeting, June 3-5, Muldersdrift-South Africa.

5.5 Collaboration with other institutions

- **International Astronomy Union:** Astronomy Introduction Policies in Mozambique.
- **South Africa Department of Science and Technology:** Introduction of Square Kilometre Array (SKA) Project Initiatives in Mozambique.
- **University of Aveiro, Portugal:** DOPPLER Project.
- **University of Porto, Portugal:** DOPPLER Project.
- **University of Coimbra, Portugal:** DOPPLER Project.
- **Newton Foundation, UK:** DARA Project

5.6 Organization of Scientific Events

- **2008:** Star Observation at the University of the Western Cape, Cape Town, South Africa
- **2009-2019:** Star Observation at Various Schools and Public Places in Maputo, Beira and Chimio, Mozambique.
- **2009-2015:** Conducting Galileo Schools Teacher Training Program in Maputo City, Beira and Chimoio, Mozambique.
- **2009-2015:** Activities related to the Universe Awareness Program in Maputo City, Beira and Chimoio, Mozambique.
- **2014:** Star Observation at Schools and Public Places in Polokwane-South Africa.

- **2015:** Star Observation at the University of Witwatersrand, Johannesburg-South Africa.
- **2016:** JEDI workshop held, 21-30 September, Gaza, Bilene Beach, Mozambique.
- **2017-2019:** DARA Project Schools held at the Astrophysics & Space Sciences Laboratory at Eduardo Mondlane University, Maputo-Mozambique.
- **2019:** Conducting DOPPLER Project Schools at Eduardo Mondlane University in Vilanculos and Maputo, Mozambique

6. Computational Skills

- High computational knowledge Programs: Python, Fortran, MatLab, and Wolfram Mathematica

7. Future Plans

- To do Pos-Doc in order to better have bases to develop research in my area of formation.
- Work to open Astronomy & Space Science Undergraduate Course at Eduardo Mondlane University.
- Work to open the Astronomy & Space Sciences Postgraduate course at Eduardo Mondlane University.
- Work towards the establishment of the Astronomy & Space Sciences Observatory at Eduardo Mondlane University.
- Work towards the establishment of the Eduardo Mondlane University Planetarium.
- Work towards more Mozambicans graduated in Astronomy & Space Sciences.
- Work for the opening of the Astronomy & Space Sciences Center at Eduardo Mondlane University.

8. Languages

- Portuguese - Spoken and written fluently
- English - Spoken and written fluently

9. Interesting Data

- Speed and dynamism
- High Spirit of Responsibility
- High learning ability
- Easy relationship with colleagues

10. References

1. **Prof. Doctor. Alexandre Maria Maphossa:** Av. Julius Nyerere, No. 3453, Eduardo Mondlane University, Main Campus, PO Box 257, Mobile: +258 824876240, Email: maphossa@uem.mz, Maputo-Mozambique
2. **Dr. Pedro Russo:** Leiden University, Leiden Observatory, Department of Science Communication & Society, P. O. Box 9513. NL-2300 RA Leiden, Netherlands, Phone: +31654372658, Email: Russo@strw.leidenuniv.nl
3. **Dr. Valério Ribeiro:** University of Aveiro, University Campus of Aveiro, 3810-193 Aveiro, Portugal, Tel .: +351 916851811, E-mail: valerio.ribeiro@ua.pt

Maputo on the 12th of November 2019



(Prof. Dr. Cláudio Moisés Paulo)