



THE TECHNICAL UNIVERSITY OF KENYA

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NAME: PROF PAUL BAKI

Faculty:	Applied Sciences and Technology
School:	PHYSICS AND EARTH SCIENCES
Department:	ASTRONOMY AND SPACE SCIENCES
Current Designation:	Professor, ASTRONOMY AND SPACE SCIENCE (DASS)
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Consultation Hours:	8AM-5PM MON - FRI



EDUCATION

LEVEL	QUALIFICATION NAME	INSTITUTION	YEAR
Doctor of Philosophy (PhD)	PHYSICS	UNIVERSITY OF NAIROBI(Kenya)	1999
Masters of Science (M.Sc.)	PHYSICS	UNIVERSITY OF NAIROBI(Kenya)	1994
Bachelor of Science (BSc)	SCIENCE	UNIVERSITY OF NAIROBI(Kenya)	1992

WORK EXPERIENCE

PERIOD	INSTITUTION	POSITION
2014 - To date	THE TECHNICAL UNIVERSITY OF KENYA	PROFESSOR
2010 - 2014	THE KENYA POLYTECHNIC UNIVERSITY COLLEGE	ASSOCIATE PROFESSOR
2009 - 2010	UNIVERSITY OF NAIROBI	ASSOCIATE PROFESSOR
2003 - 2009	UNIVERSITY OF NAIROBI	SENIOR LECTURER
2000 - 2003	UNIVERSITY OF NAIROBI	LECTURER
1995 - 1999	UNIVERSITY OF NAIROBI	TUTORIAL FELLOW
1993 - 1995	UNIVERSITY OF NAIROBI	GRADUATE ASSISTANT
1992 - 1994	MINISTRY OF LABOUR	OCCUPATIONAL HEALTH AND SAFETY OFFICER

GENERAL STATEMENT ON RESEARCH AREAS

SPACE PHYSICS, GENERAL RELATIVITY AND GRAVITATIONAL PHYSICS

CURRENT RESEARCH PROJECTS

Space Waether Effects and Impact on Technological Systems	Space Physics
Zero Gravity Research	Human Space Technology Initiative

SELECTED PUBLICATIONS

TITLE	LINK TO PUBLICATION	YEAR
<i>P.Baki Astronomy in the Cultural Heritage of African Societies, Innovations in Astronomy Education</i> , eds. Jay M. Pasachoff, Rosa M. Ros, and Naomi Pasachoff.	View online	
P. Baki <i>A Possible Electromagnetic Singularity in Finslerian Space-times</i>	View online	
P. Baki <i>Unification of Gravitation and Electromagnetism in a Relativistic Version of Finslerian Geometry</i> ,	View online	
"P. Baki, Contribution of Space Science in the Improvement of Quality of Life.". In: Proceedings of the Kenya National Academy of Sciences. Heinrich ...	View online	
P. Baki, SPH 101: Mechanics I, A peer reviewed Physics lecture module for distance learners."	View online	
Astronomy in The Cultural Heritage of African Societies	View online	2007
Post-midnight bubbles and Scintillations in the Quiet-Time June Solstice	View online	2013
The Inverse Problem of Acoustic Wave Scattering by an Air Saturated Poroelastic Cylinder	View online	2013
Total electron content and scintillations over Maseno, Kenya, during high solar activity year	View online	2019
Development in Astronomy and Space Science in Africa	View online	2018
Near real-time tropospheric water vapour profiling using ground based GPS receiver	View online	2017
Identification of the mechanical moduli of flexible thermoplastic thin films using reflected ultrasonic waves: Inverse problem	View online	2017
Radio jets in NGC 1068 with e-MERLIN and VLA: structure and morphology	View online	2023
The Status of Space Weather Infrastructure and Research in Africa.	View online	2023
Lorentz- Non-invariance Effect on Flavour Oscillations	View online	2003
Successful Kinetic Impact into an Asteroid for Planetary Defense	View online	2023
Lorentz- Non-invariance Effect on Flavour Oscillations	View online	2003
Relationship between geomagnetic storms and occurrence of ionospheric irregularities in the west sector of Africa during the peak of the 24th solar cycle	View online	2022
Effects of 15th January 2010 Annular Solar Eclipse on Traveling Ionospheric Disturbances and Equatorial Plasma Bubbles over Low Latitude Regions of East Africa	View online	2022
Massive Protocluster of a Periodic Maser Source G188.95+0.89	View online	2021
Astro-tourism in the Mara	View online	2020
14 years of 6.7 GHz Periodic Methanol Maser Observations Towards G188.95+0.89	View online	2019
The Inverse Problem of Acoustic Wave Scattering by an Air Saturated Poroelastic Cylinder	View online	2013
14 years of 6.7 GHz Periodic Methanol Maser Observations Towards G188.95+0.89	View online	2019
Storm-time mesoscale field-aligned currents and interplanetary parameters	View online	2019
Storm-Time Behaviour of Meso-Scale Field-Aligned Currents: Case Study with Three Geomagnetic Storm Events	View online	2019
Quiet time correlation between the Geomagnetic Field variations and the Dynamics of the East African equatorial ionosphere	View online	2017
Quiet Time Geomagnetic Field Variations in the East African during the inclining phase of Solar Cycle 24	View online	2016
Low latitude ionospheric scintillation and zonal plasma irregularity drifts climatology around the equatorial anomaly crest over Kenya	View online	2016
A study of the Equatorial Ionosphere over Nairobi during selected magnetically disturbed and quiet times for the year 2009 using co-located instruments	View online	2014
A study on the response of the Equatorial Ionization Anomaly over the East Africa sector during the geomagnetic storm of November 13, 2012	View online	2015
Comparison of GPS TEC Variations with IRI 2007 TEC Predictions at Equatorial Latitudes During Low Solar Activity (2009-2011) Phase Over the Kenyan Region	View online	2013
A Study of Intense Ionospheric Scintillation Observed During a Quiet Day in the East African Low Latitude Region	View online	2013
A Study of Intense Ionospheric Scintillation Observed During a Quiet Day in the East African Low Latitude Region	View online	2013
Identification of Night-time F- region Currents from CHAMP satellite observations over equatorial Africa	View online	2013
The Inverse Problem of Acoustic Wave Scattering by an Air Saturated Poroelastic Cylinder	View online	2013
The Inverse Problem of Acoustic Wave Scattering by an Air Saturated Poroelastic Cylinder	View online	2013
The Inverse Problem of Acoustic Wave Scattering by an Air Saturated Poroelastic Cylinder	View online	2013
P.Baki and J.O Malo Cauchy Analysis of the Linearized Anti-symmetric Sector of the Massive Non Symmetric Gravitational Theory	View online	1999
Low Latitude Ionospheric Scintillation and ionospheric Irregularity Drifts observations with SCINDA_GPS and VHF receivers in Kenya	View online	2013
Total Electron Content of the Ionosphere at two stations in East Africa during the 24-25 October 2011 Geomagnetic storm	View online	2013
Study of Response of Extreme Meso-Scale Field-Aligned Current to Interplanetary Magnetic Field Components BX, BY and BZ During Geomagnetic Storm	View online	2019
Spectroscopic and photometric study of open cluster Trumpler 27	View online	2016
Low latitude ionospheric scintillation and zonal plasma irregularity drifts climatology around the equatorial anomaly crest over Kenya	View online	2016
Climatology of GPS Scintillations Over Equatorial Africa during the minimum and Ascending Phases of Solar Cycle 24	View online	2015
A study of the Equatorial Ionosphere over Nairobi during selected magnetically disturbed and quiet times for the year 2009 using co-located instruments	View online	2014
Features of Night-time F-region currents over Equatorial Africa on August , 2001	View online	2014
Comparison of GPS TEC Variations with IRI 2007 TEC Predictions at Equatorial Latitudes During Low Solar Activity (2009-2011) Phase Over the Kenyan Region	View online	2013
Post-midnight bubbles and Scintillations in the Quiet-Time June Solstice	View online	2013
A Study of Intense Ionospheric Scintillation Observed During a Quiet Day in the East African Low Latitude Region	View online	2013
Identification of Night-time F- region Currents from CHAMP satellite observations over equatorial Africa	View online	2013
Low Latitude Ionospheric Scintillation and ionospheric Irregularity Drifts observations with SCINDA_GPS and VHF receivers in Kenya	View online	2013
Total Electron Content of the Ionosphere at two stations in East Africa during the 24-25 October 2011 Geomagnetic storm	View online	2012
Characterization of Ionospheric GPS Total Electron Content in Low latitude Zone over the Kenyan region during a very low solar activity phase	View online	2012
Using GPS-SCINDA Observations to study the correlation between Scintillation, Total Electron Content Enhancement and Depletions over the Kenyan Region	View online	2012
Equatorial plasma bubbles and L-band scintillations in Africa during solar minimum	View online	2012
Comparison of GPS TEC measurements with IRI-2007 TEC prediction over the Kenyan region during the descending phase of solar cycle 23,	View online	2012
Annual and semi-annual Sq variations at 960MM MAGDAS I and II stations in Africa	View online	2012
A study of latitudinal dependence of Pc 3-4 amplitudes at 96° magnetic meridian stations in Africa	View online	2011
Techniques for Merging Cultural Aspects of Astronomy with Scientific Observations	View online	2011
Elimination of Superimposed Multipath effects on Scintillation Index on Solar Quiet Ionosphere at Low latitude using a single SCINDA-GPS receiver	View online	2010
Effects of TEC Disturbances on Satellite Tracking Using GPS- SCINDA receiver over the Kenyan Airspace	View online	2010
The Spectral Analysis of X-ray Binaries from the XMM-Newton Space Craft Data using SAS software	View online	2009
A Geometric Representation of The Electromagnetic Field in Finsler Spaces	View online	2007
A possible Electromagnetic Singularity in Finslerian Space-times	View online	2006
Cauchy Analysis of the Linearized Anti-symmetric Sector of the Massive Non-symmetric Gravitational Theory	View online	1999
Kenyan Women in Physics: Overcoming Cultural, Economic, and Professional Challenge	View online	2013
Kenya Women in Physics (WIP-K) Societal, Cultural and Professional Challenges	View online	2009
1. SciDev.Net report on Sub-Saharan Africa Focus Group on Science and Technology for Development, 2014.	View online	2014

POSTGRADUATE STUDENTS SUPERVISION

NAME	PROJECT TITLE	PERIOD
Joyce W.Thairu	The Neutrino See Saw Mechanism in the Baryon Asymmetry in the Universe, MSC dissertation,	2006
Nzioki Anne Marie	The Large Scale Structure and Dark Matter in the Evolution of the Universe, MSC Dissertation,	2006
Olwendo J.O	Ph.D	2010- 2014

PROFESSIONAL AFFILIATIONS AND SOCIETIES

TITLE	INSTITUTION
MEMBER	KENYA NATIONAL ACADEMY OF SCIENCES
ASSOCIATE MEMBER	COMMITTEE ON SPACE RESEARCH
MEMBER	WORKING GROUP ON SPACE SCIENCES IN AFRICA
MEMBER	UNIVERSITIES ACADEMIC STAFF UNION
CHAIRMAN	TECHNICAL SUBCOMMITTEE ON SQUARE KILOMETRE ARRAY,NATIONAL COUNCIL OF SCIENCE AND TECHNOLOGY,KENYA