International Conference
on
Mathematical Sciences and Optimization

Theme: Applying Mathematical Research for the 4th Industrial Revolution
26th – 30th August 2024

BOOK OF ABSTRACTS

POWERED BY

Association of Mathematical Sciences and Optimization
(AMSO)

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ICMSO 2024 Pre-Conference Workshop

26th – 28th, August 2024

The 3-day pre-conference workshop is meant to expose young researchers and mature researchers, who are interested in multi-disciplinary research in Mathematical Sciences and Optimization Theory. The workshop which would be handled by experts, both local and international, and will give the necessary rudiments for good life-time research in Mathematical Sciences with ultimate applications in Optimization theory, methods, and applications.

Opening ceremony 8:30 am – 9:00 am

1. Arrival of Dignitaries	8:30 AM
2. Opening Prayer	2 minutes
3. Welcome address by Prof. J. O. Olaleru, President, AMSO	5 minutes
4. Introduction of Guest Speakers by Dr. A. Abolarinwa	10 minutes

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Workshop 1: Pure Mathematics
Generalities and Functional Background for Inverse Problems
Groups, their Generalisations and some Applications
Perspectives in Fixed Point Theory
Current Trend in Hyper-Algebraic Structures and their Applications

Speakers: Prof. G. Degla, Prof. T. G. Jaiyeola, Prof. M. Abbas

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Workshop 2: Applied Mathematics
Fractional Differential and Integral Operators with Applications
Introduction to Machine Learning and AI with Applications – Control Theory and Applications
Mathematical Modelling

Speakers: Prof. A. Atangana, Prof. B. I. Oyelami, Dr. C. Nwaigwe, Dr. E. A. Bakare

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Workshop 3: Statistics and Applications
Data Analytics Tools
Bayesian Modeling
Survival Analysis to Statistics

Speakers: Prof. S. Adebayo, Prof. W. B. Yahya, Dr. O. T. Arowolo

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Hands on Training (All 3 groups)

Python:
Latex for beginners:

TIMETABLE

		9.00-10.30am	10.45-12.15am	12.15-12.45	12.45-2.15pm	2.30-3:30pm	3.30-4.30pm	4:30-6:00pm
MONDAY	Pure	Prof. T. G. Jaiyeola	Prof. G. Degla	BREAK	Prof. M. Abbass	FREE	BREAK	HANDS ON
	Applied	Prof. B. Oyelami	Prof. A. Atangana		Dr. E. A. Bakare	Dr. C. Nwaigwe		
	Statistics & Applications	Prof. W. B. Yahaya	Prof. W. B. Yahaya		Prof. W. B. Yahaya	Prof. W. B. Yahaya		
TUESDAY	Pure	Prof. T. G. Jaiyeola	Prof. G. Degla	BREAK	Prof. M. Abbass	FREE	BREAK	HANDS ON
	Applied	Prof. B. Oyelami	Prof. A. Atangana		Dr. E. A. Bakare	Dr. C. Nwaigwe		
	Statistics & Applications	Prof. S. Adebayo	Prof. S. Adebayo		Prof.S. Adebayo	Prof. S. Adebayo		
WEDNESDAY	Pure	Prof. T. G. Jaiyeola	Prof. G. Degla	BREAK	Prof. M. Abbass	FREE	BREAK	HANDS ON
	Applied	Prof. B. Oyelami	Prof. A. Atangana		Dr. E. A. Bakare	Dr. C. Nwaigwe		
	Statistics & Applications	Dr. O. T. Arowolo	Dr. O. T. Arowolo		Dr. O. T. Arowolo	Dr. O. T. Arowolo		
THURDAY		Opening Ceremony	Plenary Session [Prof. C. Thron]		Paper presentation	Paper presentation	Paper presentation [ONLINE]	Paper presentation
FRIDAY		Plenary Session [Prof. T. G. Jaiyeola]	Paper presentation	Paper presentation [ONLINE]	BREAK	ANNUAL MEETING	DEPARTURE	

ICMSO 2024 PROGRAMME SCHEDULE

Thursday 29th August – Friday 30th August 2024

CONFERENCE OPENING CEREMONY **9:00 AM – 10:30 AM**

1.	Arrival of Dignitaries	9:00 AM
2.	Opening Prayer	2 minutes
3.	National Anthem	3 minutes
4.	Introduction of Dignitaries	5 minutes
5.	Welcome address by the **Prof. J. O. Olaleru,** President, AMSO	10 minutes
6.	Message by **Prof. Oluwole Sikiru Banjo**, Vice Chancellor, Tai Solarin University of Education	10 minutes
7.	Message by **Prof. P. Mebine**, Executive Director/CEO, National Mathematical Center	10 minutes
8.	Keynote Address by **Prof. A. Atangana**, University of Free State, SA (No. 1 Mathematician, World Stanford Rating)	30 minutes
9.	Message from the President, Nigerian Mathematical Society	5 minutes
10.	Goodwill Messages from **Prof. A. A. Arigbabu** (Hon. Comm.)	5 minutes
11.	Message from **Prof. O. D. Adejoye**, Dean, College of Science and Information Technology	5 minutes
12.	Message by the HOD, Mathematics, Tai Solarin Education of Education	5 minutes
13.	Vote of Thanks by **Dr. H. Akewe**, Chairman, NOC	5 minutes
14.	Closing Prayer	2 minutes

PAPER PRESENTATION SCHEDULE

Thursday 29th August 2024

10:45 AM – 12:15 PM	Plenary Session by **Prof. C. P. Thron**
12:15 AM – 12:45 PM	Break
12:45 PM – 3:30 PM	Session I
3:30 PM – 4:30 PM	Lunch Break
4:30 PM – 6:00 PM	Session II

Friday 30th August 2024

9:00 AM – 10:30 AM	Plenary Session by **Prof. T. G. Jaiyeola**
10:45 AM – 12:45 PM	Session III
12:45 PM – 2:15 PM	Lunch Break/Jummat Prayers
2:30 PM – 3:30 PM	Annual Meeting
3:30 PM – 6:00 PM	Depature

PLENARY TALKS

PARALLEL SESSIONS

PURE MATHEMATICS

NUMERICAL ANALYSIS & APPLIED MATHEMATICS

AM 47: STABILITY ANALYSIS OF THE MODEL OF SOLID WASTE MANAGEMENT

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Abstract: The dream of every nation is to have a nation where every scrap of trash is converted to valuable resources which can increase the gross domestic product (GDP). Waste management refers to the process of managing discarded waste materials that had served their purpose and are no longer useful. The research is aimed at converting waste to wealth. In this study, the model of solid waste management is presented as a system of equations with eight compartments. The model was checked for existence and uniqueness of solutions, the reproduction number was obtained using next generation matrix method, the stability analysis was performed and the graph of R0 against time was presented.

Keywords: Waste management, Stability, Solid waste, Simulation, Wealth creation