



## Activities of Mathematics Department

### From 1-1-39 to 1-1-42

المكان location	التاريخ date	منفذ الدورة Mentor/Instructor	عنوان النشاط Activity title	
نادي الرياضيات Math club	1439/5/19	د. اسماء عبد المنعم Dr Asma ..	مهارات البحث الجامعي في مرحله البكالوريوس Research skills for undergraduate.	1.
نادي الرياضيات Math club	1439/5/21	أ. ارشيا	كيفية كتابه البحث الجامعي في برنامج الورد Writing a research project using Word	2.
نادي الرياضيات Math club	1439/5/26	أ. سيد معراج	كيفية عرض البحث الجامعي في برنامج البوربوينت Powerpoint to present your project	3.
نادي الرياضيات Math club	1439/6/5	أ. محجبين & أ. حميرا	تطبيقات kku في جوالك KKU applications for your phone	4.
نادي الرياضيات	1439/6/10	أ.د. زهبة الرانزه	اساسيات التفاضل والتكامل Fundamentals of calculus	5.
نادي الرياضيات Math club	1439/6/11	الطالبة : شيخه حبثور	استخدام التطبيقات الحديثه في تعلم الرياضيات	6.
نادي الرياضيات Math club	1439/6/17	د. عائشه الرانزه	تعلم اساسيات الرياضيات Learning the fundamentals of math	7.
نادي الرياضيات Math club		د. فاتن علي	المذاكره الذكيه Smart revision	8.
نادي الرياضيات Math club	1439/6/19	د. عائشه الرانزه	تعلم اساسيات الرياضيات Learning the fundamentals of math	9.
نادي الرياضيات		د. اسماء عبد المنعم	رياضيات بدون آله حاسبه Math without calculator	10.
نادي الرياضيات Math club	1439/6/24	د. فاتن علي	استخدام آله الحاسبه بمهاره لغير المختصين بالرياضيات Calculator with skills	11.
نادي الرياضيات	1439/6/20	د. عائشه الريمي	الفهرسه باستخدام برنامج الورد Word for indexing	12.
نادي الرياضيات Math club	1439/6/27	د. عائشه الريمي	اللاتك للمبتدئين Latex for beginners	13.
نادي الرياضيات	1439/6/23	الطالبة: نورهان محمد البيوش	برنامج MATLAB	14.
نادي الرياضيات Math club	1439/6/25	أ. حميرا	Social networking its advantages and disadvantages	15.
نادي الرياضيات Math club	1439/6/26	أ. محجبين	Scientific Research Methods	16.



نادي الرياضيات Math club	1439/7/12	ا مها القحطاني	M E learning Application	.17
نادي الرياضيات Math club	1440/1/16 هـ	ا. منال الاسمري	رحلتي مع التفوق (لأنك دليلك للنجاح) My trip to success	.18
نادي ثراء Thara club	1440/2/2 هـ	طالبات القسم	رمز وحكاية Story and symbol	.19
نادي الرياضيات Math club	1440/2/5 هـ	ا. حميرا و ا. ارشيا	Basics of IOT (Internet OF Things) اساسيات انترنيت الأشياء	.20
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نادي الرياضيات Math club	1440/2/15 هـ	د عائشه الدريمي	IATEX اللاتك لطالبات الدراسات العليا Latex for graduate students	.22
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كلية العلوم Faculty of Science	1440/3/12 هـ 1440/3/20 هـ	د عائشه الدريمي	كهايتين- مشاركة مجتمعية ???	.25
قسم الرياضيات Math club	1440/07/11	قسم الرياضيات Math Department	اليوم العلمي و الثقافي الثالث لقسم الرياضيات The third scientific and cultural day of mathematics department	.26
قسم الرياضيات Math club	1440/07/20-19	قسم الرياضيات Math Department	المؤتمر الدولي الأول للرياضيات وتطبيقاتها The first International conference of mathematics and its applications	.27
قسم الرياضيات Math club	1440/09/20-12	قسم الرياضيات Math Department	المدرسة الصيفية لقسم الرياضيات WAMS Summer School of Mathematics	.28
نادي الرياضيات	1441/2/3,8,10 هـ	د. أسماء عبدالمنعم	ثلاث محاور لإنجاز بحث تخرج جيد Three points to achieve a great research project	.29
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ابتدائية فاطمة بنت الخطاب بخميس مشيط Fatime tou KH. Primary school	1441/2/22 هـ	طالبات النادي Members of math club	مشاركة مجتمعية (عجائب الرياضيات) Math Wonders	31
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## ICMA 2018 March 26 - 27

The International Conference of Mathematics and its Applications (ICMA) is the first international conference organized by the Department of Mathematics at King Khalid University. It seeks to contribute to providing a creative space that brings together a group of distinguished international and local researchers to create research and scientific partnerships.

The conference focuses on timely topics in applied mathematics, analysis, geometry and algebra & their applications, and provides a discussion platform for participants to exchange ideas and expand their academic network.

### Conference Committee

**President of the Conference**  
Prof. Falteh R. M. Al-Solamy  
Rector of King Khalid University

**Scientific Committee**  
Dr. Ali AlKhalidi (chair)  
Dr. Ibrahim AlManjahi  
Dr. Awad Al-Mohy  
Dr. Zehba A. Raizah  
Dr. Mohamed Kbiri Alaoui  
Dr. Younes Chahlaoui

### Topics

Topics in Mathematics, including, but not limited to:  
Applied Mathematics,  
Algebra and Its Applications,  
Analysis, Geometry and their Applications.

### Location

The conference will be held at the main auditorium, building B (for male) within Guraigar campus (main campus) at Abha, and at the Science College's auditorium.

## Plenary Presentations and Tutorials

ICMA is pleased to announce there will be many plenary presentations and tutorials, by the speakers below:

### Plenary Speakers from outside KSA

Prof. P. Van Dooren, Culouvain, Belgium  
Prof. T. Nakahara, Saga University, Japan  
Prof. M. A. Khamsi, University of Texas at El Paso, USA  
Dr. N. Wildberger, UNSW, Australia  
Dr. H-P. Schrockner Univ. Innsbruck, Austria

### Plenary Speakers from inside KSA

Prof. A. Khammash, Umm Al-Qura University  
Prof. M. Al-Shomrani, King Abdulaziz University  
Dr. M. Alfuraidan, King Fahd University of Petroleum and Minerals  
Prof. A. Tzavaras, King Abdullah University of Science and Technology  
Prof. Y. Alkhamees, King Saud University  
Prof. D. Gomes, King Abdullah University of Science and Technology  
Prof. S. Messaoudi, King Fahd University of Petroleum and Minerals

For further informations, please visit:

<http://icm.kku.edu.sa>



الملتقى العلمي و الثقافي الرابع

لقسم الرياضيات

## The Fourth Scientific and Cultural Day

٢/٣/١٤٤١ هـ

30/10/2019

Department of Mathematics,  
College of Science,  
King Khalid University, Abha, Saudi Arabia.

### Head of Department:

Dr. Marei Alqarni

### Organizing Committee:

Dr. Abdou Alzubaidi

Dr. Aisha Alderremy

Prof. Ahmed Bachir

Prof. Mohammed Kadi Attouch

TA. Nada Alshehri

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## On $d$ -Orthogonal Polynomials of Sheffer type

**Hamza Chaggara**

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### Abstract

The notion of  $d$ -orthogonal polynomials is a generalization of the notion of orthogonality in the sense that the polynomials  $P_n$ ,  $n = 0, 1, \dots$  satisfy orthogonality conditions with respect to  $d$  forms.  $d$ -orthogonal polynomials are characterized by a higher-order recurrence relation of the form

$$P_{n+1}(x) = (x + \alpha_{n+1})P_n(x) + \sum_{i=1}^d \binom{n}{k} \beta_k^{(n+1)} P_{nk}(x), \beta_{(n+1)}^d \neq 0, n \geq 0.$$

We are interested, in this talk, with some characterization problems for  $d$ -orthogonal polynomial sequences of Sheffer type.

# Exact Solutions for a Class of Wick-Type Stochastic $(3 + 1)$ - Dimensional Modified Benjamin-Bona-Mahony Equations

**Mohammed Zakarya Nasr Ibrahim**

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## Abstract

In this paper, we investigate the Wick-type stochastic  $(3 + 1)$ -dimensional modified Benjamin- Bona- Mahony (BBM) equations. We present a generalized version of the modified tanh-coth method. Using the generalized modified tanh-coth method, white noise theory, and Hermite transform, we produce a new set of exact traveling wave solutions for the  $(3 + 1)$ -dimensional modified BBM equations. This set includes solutions of exponential, hyperbolic, and trigonometric types. With the help of inverse Hermite transform, we obtain stochastic travelling wave solutions for the Wick-type stochastic  $(3 + 1)$ -dimensional modified BBM equations. Eventually, by application example, we show how the stochastic solutions can be given as white noise functional solutions.

## Modern statistical analysis of forage quality assessment with NIR spectrometry

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### Abstract

Recently, the statisticians have developed a new approach called functional Statistics to treat the data as curves or images. In parallel, the Near-Infrared Reflectance (NIR) spectroscopy approach has been used in modern Chemistry being a fast, inexpensive and accurate procedure to characterize chemical properties for an object. In this paper, we study the forage quality by analysing the spectroscopy procedure with some modern statistical models. Our contribution leads to the prediction of chemical components of Chinese ryegrass forage by analysing its spectral data using some functional models. Precisely, the functional linear quantile regression (FLQR), the functional nonparametric quantile regression (FNQR), the functional local linear quantile regression (FLLQR) and the functional local linear model regression (FLLMR) are implemented to predict the quantities of acid detergent fiber (ADF), neutral detergent fiber (NDF), and crude protein (CP) contents. The choice of these functional models is motivated by the fact that they can construct a predictive region with a given confidence level. We show that the considered models improve the prediction results significantly as compared to conventional models such as the classical partial least squares regression (PLSR) and the principal component regression (PCR). Moreover, we also show that the proposed models are more robust than their competitive models like PLSR and PCR in the sense that their efficiency is not much affected by non-homogeneity of the data.

#### keywords:

Leymus chinensis, functional quantile regression, neutral detergent fiber, Robust equivariant regression.

#### References:

Chikr-Elmezouar, Z., Almanjahie, I., Laksaci, A., Rachdi, M. (2018): FDA: strong consistency of the k NN local linear estimation of the functional conditional density and mode. Journal of Nonparametric Statistics 1-21.

# A piece of advice on how to get your paper rejected

**Abdulaziz Deajim**

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## Abstract

I intend to remind the audience of some mistakes that authors may commit which cause their submitted manuscripts to most likely be rejected. Needless to say that there are other possible factors which are out of the authors' control which I intend not to touch in detail.

# Cyclic Surfaces of constant Gaussian curvatures in 3-dimensional Lorentz space $\mathbb{R}_1^3$

**Fathi M Hamdoon**

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## Abstract

In this paper, we give a new representation of cyclic surfaces in 3- dimensional Lorentz space  $\mathbb{R}_1^3$  by using a circle of curvature of a different types (spacelike, timelike) space curve. The conditions on a space curve such that the cyclic surfaces having zero or nonzero constant Gaussian curvatures are obtained.

**keywords:**

Cyclic Surfaces, Lorentz space, Gaussian curvature.

# Closed form solutions for some nonlinear partial Difference Equations

**Tarek Fawzi Ibrahim**

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## Abstract

In this Summary, we introduce a generalized form of the well known ToDD's difference equation and some higher order nonlinear rational partial difference equations and give the closed form expressions for these generalized forms. We shall use a new technique to confirm the results by using what we call "piecewise n-dimensional mathematical induction" which we introduce here for the first time. We shall note that this new concept represents generalized form for many types of mathematical induction. As a direct consequences, we investigate and drive the explicit solutions for the well known ordinary ToDD's difference Equation and some higher order ordinary difference equations as special cases.

**keywords:**

(partial)difference equations, solutions , piecewise n-dimesional mathematical induction.



# Efficiency of Multivariate Logistic Regression Analysis And Discriminant Analysis In Classification Of Rich Countries According To Human Development Index

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## Abstract

In this paper, we used the multivariate logistic regression method to classify countries and to arrive at a linear model for distinguishing countries into rich and very rich, according to Human Development Index based on Human Development Report 2016. To illustrate the importance of the logistic regression model, it has been compared with the discriminating function, where they both classify the value to their correct society. We found through the results, that the method of logistic regression is more efficient than the discriminatory function in the classification of the countries under study. The logistic regression has been classified 92 countries out of 96 with a probability of 95.8% classification. The discriminating function classified 89 countries with a probability of 92.7%, the comparison was relied on statistical criteria (apparent error rate, and apparent correct classification rate. The ordering of the influential indicators was significant on the classification of countries according to their relative importance in the case of the regression model (mean years of schooling, life expectancy at birth, and gross national income(GNI) per capita).In the case of the discriminant function (GNI per capita, maternal mortality, and life expectancy Birth). Based on this, we suggest that countries should be classified according to the United Nations Human Development Report and data processing using multi-response logistic regression models.

### keywords:

Linear discriminant analysis, Multivariate logistic regression, Apparent error rate, Apparent correct classification rate, Human Development Index.

# How to think like a Mathematician

**Younes Chahlaoui**

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## Abstract

Learning mathematics is hard. But I believe very strongly that if you can think like a mathematician, then the learning process is easier. In this talk I will present some ways how to achieve that.

# Sequences on Bounded Variation and Tensor Products of Banach Lattices

Shawgy Hussein (2) and Batoul Ali Al balula Mahmoud (1)

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## Abstract

We show the sequence of bilinear maps of order bounded variation, semivariation and norm bounded variation. We use these notions to extend the knowledge of the projective tensor product of Banach lattices.

### keywords:

Tensor products, Banach lattices, Archimedean Riesz space, projective norm .

## Retraction of braid and braid group

**Mohammed M. Al-Shamiri**

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### Abstract

In this article we introduce the retraction and conditional retraction of braids and braid groups, we show the retraction of braid group is not necessary a braid group also a retraction of a singular braid is not necessary a singular braid. We prove that a retraction of a braid is a braid and every retraction of a braid group is a monoid also we prove that a retraction is a braid invariant. The limit of all types of retraction is described.

## INVITATION

## دعوة عامة

اليوم العلمي والثقافي الرابع لقسم الرياضيات

The Fourth Scientific and Cultural day of the Mathematics Department

يسر لجنة الدراسات العليا والبحث العلمي بقسم الرياضيات بكلية العلوم تنظيم لقاء تحت عنوان " اليوم العلمي والثقافي الرابع لقسم الرياضيات " يوم الأربعاء 1441/03/02 هـ الموافق 30/10/2019.

الرجال(مدرج 5) - النساء (قاعة النسائية بالقريقر)

Time	Titles	Invited Speakers	Area
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9:00 - 9:20	On d-Orthogonal Polynomials of Sheffer type	Pr. Hamza Chaggara	Analysis
9:20 - 9:40	Exact Solutions for a Class of Wick-Type Stochastic $\$(3+1)\$$ - Dimensional Modified Benjamin-Bona-Mahony Equations	Dr. Mohammed Zakarya Nasr Ibrahim	Applied Mathematics
9:40 - 10:00	Modern statistical analysis of forage quality assessment with NIR spectrometry	Dr. Ibrahim M. Almanjahie	Statistics
10:00 - 10:20	A piece of advice on how to get your paper rejected	Dr. Abdulaziz Deajim	Cultural
10:20 - 10:40	Cyclic Surfaces of constant Gaussian curvatures in 3-dimensional Lorentz space $R_1^3$	Dr. Fathi M Hamdoon	Differential Geometry
10:40 - 11:00	<b>Break</b>		
	<b>Chairman Dr. Mohammed Hazzazi</b>		
11:00 - 11:20	Closed form solutions for some nonlinear partial Difference Equations	Dr. Tarek Fawzi Ibrahim	Analysis
11:20 - 11:40	Efficiency of Multivariate Logistic Regression Analysis And Discriminant Analysis In Classification Of Rich Countries According To Human Development Index	Dr. Mohammed Mohammed Ahmed Al Mazah	Statistics
11:40 - 12:00	How to think like a Mathematician	Dr. Younes Chahlaoui	Cultural
12:00 - 12:20	Sequences on Bounded Variation and Tensor Products of Banach Lattices	Dr. Batoul Ali Al balula Mahmoud	Analysis
12:20 - 12:40	Retraction of braid and braid group	Dr. Mohammed M. Al-Shamiri	Differential Geometry
12:40 - 01:00	<b>Honoring</b>		
01:00 - 02:00	<b>Lunch</b>		

Organizing Committee:	Head of Department:
Dr. Abdou Alzubaidi Dr. Aisha Alderremy Prof. Ahmed Bachir Prof. Mohammed Kadi Attouch TA. Nada Alshehri	Dr. Marei Alqarni



# المحتويات

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الفصل ١

برنامج المتقى:

الفصل ٢

كلمة رئيس القسم :

## ١٠٢ موضوع الملتقى:

يلعب البحث العلمي دورا كبيرا في تطوير وتنمية المستوى الثقافي لدى الشعوب حيث أصبح السمة الأساسية في تطوير المجتمعات فهو يسعى إلى فتح الأبواب الموصدة ويربطها بالواقع تطبيقا وممارسة. من هذا المنطلق إعتزم قسم الرياضيات تنظيم لقاء تحت عنوان: اليوم العلمي و الثقافي الثالث لقسم الرياضيات بتاريخ ١٤٤٠/٧/١١ هجرية الموافق 18/3/2019 ميلادي. لدى القسم في هذا اليوم في نسخته الثالثة أملا عريضة في إطار البحث العلمي، حيث ينتظر من أعضاء القسم الكثير من الإنجازات و الأفكار البناءة و المعمقة القابلة للإبتكار، ناهيك عن نشر البحوث في مجالات عالمية معتبرة. ونحن نأمل بأن يكون للقسم المزيد من التميز و أن يكون بحد ذاته مرجعا و يقوم بدور إعلامي ثقافي إضافة لدوره العلمي الرائد.

## ٢٠٢ المحاور

سيتم التطرق في هذا الملتقى إلى تخصصات مختلفة في مجال الرياضيات نذكر منها الإحصاء، الجبر، التحليل والرياضيات التطبيقية.

## ٣٠٢ الأهداف

- إحتواء الأعضاء الجدد في المجموعات البحثية الموجودة في القسم
- تشجيع الباحثين وأعضاء القسم و الدفع بهم لتطوير مستقبل الرياضيات والبحث العلمي في الجامعة
- برامج شراكة مع الباحثين وطلاب الدراسات العليا
- إستضافة الباحثين المتميزين و الاستفادة من خبراتهم العلمية و البحثية.
- توطين المعارف والخبرات البحثية
- إثراء العملية التعليمية لتحسين مستوى الطلاب والطالبات.

الفصل ٣

الملخصات:

Abstracts

Talk 1:

١٠٣ المداخلة ١:

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## Riccati Flows and their Applications to Nonlinear PDEs

Simon J. A. Malham

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### Abstract

We present a program for generating the solution of large classes of nonlinear partial differential equations, by pulling the equations back to a linear system of equations. The idea underlying this program is to lift the standard relation between Riccati equations and linear systems to the infinite dimensional setting. This generalization is well-known in optimal control theory where the off-line Riccati solution mediates the optimal current state feedback. The solution procedure can be presented at an elementary level and many examples will be included. Such example applications are partial differential equations with nonlocal nonlinearities, for example the nonlocal FKPP equation and Smoluchowski's coagulation equation and, by association, the standard inviscid Burgers equation. We also include the viscous Burgers equation via random characteristics and show how the procedure extends to analogous classes of SPDEs (with nonlocal nonlinearities).

### Biographical notes:

Dr Simon Malham is an associate Professor and Director of MSc Admissions in the school of MACS. His main research revolves around the analytical and numerical solution of nonlinear partial differential, and stochastic differential, systems. He utilizes techniques from analysis, algebra and elementary algebraic geometry to either obtain explicit solutions or develop efficient numerical simulation techniques to find accurate approximations. Dr Malham's work also touches on the stability of traveling waves and the numerical computation of spectra.



Talk 2:

٢٠٣ المداخلة ٢:

## On Generalization of Rough Sets by using two Different Methods

Mona Hosny

Department of Mathematics, Faculty of Science, King Khalid University,  
Abha, Saudi Arabia.

Email: maly@kku.edu.sa

### Abstract

Rough set theory was introduced by Pawlak in 1982 to handle imprecision, vagueness and uncertainty in data analysis. It is dealing vagueness, (ambiguous) of the set by using the concept of the lower and upper approximations of objects based on an equivalence relation. The main idea of rough sets corresponds to study these approximations. So, in this talk, we generalize these approximations in the frameworks of topological spaces. The lower and upper approximations of Pawlak's model are replaced by interior and closure notions of the topological space. The set of approximations are defined using the new topological notions  $\delta\beta_j$ -open sets and  $\Lambda_{\beta_j}$ -sets. Such techniques open the way for more topological applications in rough context and help in formalizing many applications from real-life data. The current extension approximations are satisfied all properties of original rough set theory without any conditions of restrictions. Comparisons between the current approximations and the previous one are introduced and shown to be more general.

### Biographical notes:

Mona Hosny Abd El-Khaleek Aly is an Assistant Professor of Pure Mathematics at Ain Shams University. She born in 1985. She received the Ph.D. degree in Topology from Ain Shams University in 2015. In 2016, she got the Prof. Dr. Bahaa El-deen Helmy Esmaeels award for the best Ph.D thesis. Her primary research areas are General Topology, soft sets, Multi-sets and theory of sets. Her research interests are in the areas of Rough Sets, order topology, bitopological spaces and supra topological topology. Dr. Mona has published over 19 research articles in different international scientific journals. She was the Supervisor of many PHD and MSC Thesis. She is reviewer in many scientific journals. She is currently working as an Assistant Professor in Department of Mathematics, Faculty of Science, King Khalid University, Abha, Saudi Arabia.

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ملخص المداخلات

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Talk 3:

٣.٣ المداخلة ٣:

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## A Robust Chaotic Steganographic Scheme with High Embedding Capacity

Sajjad Shaukat Jamal

Department of Mathematics,  
College of Science King Khalid University,  
Abha, P.O.Box 9004, Saudi Arabia  
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### Abstract

Fundamental objectives of a steganographic technique are robustness and capacity of the hidden information. This talk presents a high embedding capacity, robust steganographic algorithm based on an effective use of chaos. The specialty of the proposed method lies in the process of embedding secret information using some stronger chaotic systems along with the use of a substitution box. Secondly, a high-capacity level is attained due to the combination of the spatial domain steganographic approach along with the frequency domain pattern. Thirdly, robustness is achieved by incorporating the discrete cosine transform (DCT) with the discrete wavelet transform (DWT). These three measures contribute to reach a high improved performance of the anticipated method. The statistical strength of our algorithm is examined through various analysis techniques, such as information entropy, correlation, contrast, energy, homogeneity, peak signal to noise ratio (PSNR), mean squared error (MSE). We further evaluate the robustness of the proposed technique against several image processing attacks. The results of these analyses show that our algorithm is significantly secure and can be reliably used in digital signal processing applications.

### Biographical notes:

Sajjad Shaukat Jamal is a Pakistani mathematician working in the areas of Application of Mathematics in the field of Information security. He received his Ph.D. in mathematics from Quaid-i-Azam University (Pakistan) in 2018. His research interests include cryptography, watermarking and steganography. Sajjad Shaukat is currently working as an Assistant Professor in the Department of Mathematics at King Khalid University, Saudi Arabia.



Talk 4

٤.٣ المداخلة ٤:

Recent Trends in Numerical Including their Industrial and Environmental Applications

الاتجاهات الحديثة في المحاكاة العددية بما في ذلك تطبيقاتها الصناعية و البيئية

Abdelraheem M. Aly

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Faculty of Science King Khalid University,  
Abha, Saudi Arabia  
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**Abstract**

In the recent years, numerical simulations have played vital role in design several modern systems. The numerical simulation has become a very important and successful approach for solving complex problems in almost all areas of human life. This talk will focus on the recent trends of the numerical techniques including their applications. Here, several numerical simulations will be present:

- Crowd simulation of prayers in Masjid al-haram.
- Simulation of sloshing tank and impact of a rigid body into calm water.
- Tsunami-simulation in Japan.
- Simulation of fluid flows through porous structures.
- Bridge washout simulation.
- Simulation of natural/mixed convection in cavities.

At the end of the talk, I will introduce guidelines for young researchers in the following points:

- ✓ Brief introduction in Endnote software to manage references and citations.
- ✓ How to know ISI Journals.
- ✓ Scopus and Google scholar citations.

**Biographical notes:**

Dr. Abdelraheem Mahmoud Aly received his M. Sc. (Mathematics) from South Valley University, Egypt in 2008 and he received his Ph.D. degree (Applied mathematics) from the Kyushu University, Japan in 2012. Dr. Abdelraheem employed as a postdoctoral fellow in University of Ulsan, South Korea two times at 2013 (8 months) and at 2016 (11 months). Abdelraheem worked in Kyushu University as a JSPS postdoctoral fellow in Japan from (2014-2015). Currently, he is an associate professor in Department of Mathematics at King Khalid University, Abha, Saudi Arabia. His research interests include Computational Fluid Dynamics, Smoothed Particle Hydrodynamics, Heat and Mass Transfer, Multi Phase Flow, Porous Media.

Talk 5:

٥.٣ المداخلة ٥:

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## Characterization of Warped Product Pointwise Semi-Slant Submanifolds of Sasakian Manifold

Akram Ali

Department of Mathematics,  
Faculty of Science King Khalid University,  
Abha, Saudi Arabia  
Email: akramali133@gmail.com

### Abstract

A warped product submanifold, whose tangent bundle can be decomposed to two orthogonal distributions; invariant and pointwise slant functions, is called warped product pointwise semi-slant submanifold. The objective of this talk is to classify warped product pointwise semi-slant submanifold, isometrically immersed into Sasakian manifold. K. S. Park provided (non-)existence of a warped product pointwise semi-slant submanifold in a Sasakian manifold such that the structure vector field is tangential to fiber. In contrast, we provide intriguing theorems on warped product pointwise semi-slant submanifolds in a Sasakian manifold in terms of the shape operator and tensor fields so that structure vector field is tangential to base manifold and fiber is a pointwise slant function.

### Biographical notes:

Dr Akram Ali received his bachelor and master degrees from India at the Department of Mathematics, Aligarh Muslim University, Aligarh. He completed his Ph.D. in Differential Geometry at the institute of Mathematical Science, University of Malay, Kuala Lumpur Malaysia, which is top rank university in the world. He also did one year postdoctrante from Brazil at Universidade Federal do Amazonas. He published 14 ISI journal papers 3 in ESCI.

Talk 6

٦.٣ المداخلة ٦:

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Dual Numerical Simulations Flow and Heat Transfer of Polymeric Fluid with Various Rheological Aspects

Muhammad Y. Malik

Department of Mathematics,  
Faculty of Science King Khalid University,  
Abha, Saudi Arabia  
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**Abstract**

Dynamics of the polymeric type liquid (Maxwell model) are considered in the porous medium in order to analyse the absorbent effects. Energy and concentration equations are utilized to present the heat and mass transfer effects. Shrinking properties of the wall are considered to investigate the permeability and wall mass transfer effects. Mathematical formulations are presented and the set of derived partial differential equations (PDEs) are converted into coupled and nonlinear ordinary differential equations (ODEs) through suitable variables. The simplified mathematical equations are approximated numerically for the solution procedure. Graphical illustrations are presented in order to show the rheological properties of Deborah number, wall mass transfer, heat generation/absorption..., chemical reaction effects etc. Various tables are also constructed to present the dual nature of solutions for the skin friction, local Nusselt and Sherwood numbers.

### **Biographical notes:**

Prof. Malik got MSc and MPhil degrees with distinction from Department of Mathematics, Quaid-I-Azam University, Islamabad Pakistan. He was awarded Central Overseas Training (COT) scholarship for higher studies. He moved to University of Bradford, United Kingdom and obtained PhD degree in 2000 in the field of Numerical Solution of Ordinary and Partial Differential Equations.

Prof. Malik has successfully supervised more than 40 MPhil students and 12 PhD students. He obtained Best University Teacher Award from Higher Education Commission, Government of Pakistan in 2016. Dr Malik has been Productive Scientist of Pakistan (PCST award) since 2011. He has published about 160 research articles and these are cited by more than 2000 researchers.

Professor Dr Muhammad Yousaf MALIK started his carrier as lecturer in Mathematics in 1987. He was promoted as Assistant Professor in 1990 and became Associated Professor in 2000. In 2014 Dr Malik became Tenured Professor in 2014 and served in Quaid-I-Azam University as Chairman, Department of Mathematics before joining new assignment of Professor in Kingdom of Saudi Arabia.

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ملخص المداخلات

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Talk 7:

٢٠٣ المداخلة ٧:

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Universities in U.K

Simon J. A. Malham

Mathematics Department

Heriot-Watt University

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**Abstract**

Universities in U.K.

الفصل ٤

الخاتمة

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ملخص المداخلات

وختاماً أتوجه بالشكر إلى كل من ساهم من بعيد أو قريب في إنجاح هذا الملتقى، للمشاركين بمدخلاتهم القيمة، واللجنة التنظيمية لهذه الفعالية البارزة في القسم. متمنياً النجاح والتوفيق للجميع.

رئيس قسم الرياضيات  
د. إبراهيم المنجحي



## Invitation

Nowadays Scientific research plays a major role in developing and improving the cultural awareness of nations. It has become a key feature of the evolution of societies. It seeks to open closed doors, leading towards practices and applied experiments for a better living. From this stand point, mathematical department is organizing his colloquium "The Third Scientific and Cultural Day" on 11/7/1440 corresponding to 18/3/2018.

Time	Titles	Invited Speakers	Area
<b>Chairman Dr. Ibrahim Almanjahie</b>			
8.45- 9.00	<b>Opening</b>		
9.00- 10.00	<b>Riccati flows and their applications to nonlinear PDEs</b>	Dr. Simon J. A. Malham	Applied Mathematics
<b>Break (20 Minute)</b>			
<b>Chairman Dr. Yahia Almalki</b>			
10.20- 10.40	<b>On generalization of rough sets by using two different methods</b>	Dr. Mona Hosny	Topology
10.40- 11.00	<b>A robust chaotic steganographic scheme with high embedding capacity</b>	Dr. Sajjad Shaukat	Algebra and Logic
11.00- 11.20	<b>Recent trends in numerical simulations including their industrial and environmental applications</b>	Dr. Abdelraheem M. Aly	Cultural
<b>Break (20 Minute)</b>			
<b>Chairman Dr. Abdou</b>			
11.40- 12.00	<b>Characterization of warped product pointwise semi-slant submanifolds of Sasakian manifolds</b>	Dr. Akram Ali	Geometry
12.00- 12.20	<b>Dual numerical simulations for flow and heat transfer of polymeric fluid with various rheological aspects</b>	Prof. Muhammad Y. Malik	Applied Mathematics
12.20- 12.40	<b>Universities in the U.K</b>	Dr. Simon J. A. Malham	Cultural
12.40- 1.00	<b>Honoring participants</b>		
1.00- 2.00	<b>Lunch</b>		

### Head of the Department

**Dr. Ibrahim Almanjahie**

### Organizing Committee

**Dr. Metib Alghamdi**  
**Dr. Aisha Aldramy**  
**Dr. Mohamed Abdalla**  
**Prof. Ahmed Bachir**  
**Dr. Mohammed Kbiri**  
**Hanan Ahmad**

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يدعوكم قسم الرياضيات بكلية العلوم بأبها لحضور  
اليوم العلمي والثقافي الثالث لقسم الرياضيات

## The Scientific and Cultural Day of the Mathematics Department

ضيف الملتقى



**Dr. SIMON MALHAM**  
HERIOT WATT UNIVERSITY, UK.

• سيتم التطرق في هذا الملتقى إلى  
تخصصات مختلفة في الرياضيات  
منها:

الجبر

التحليل

الرياضيات التطبيقية

• إلقاء نظرة على برامج الدراسات  
العليا في بريطانيا يلقيها ضيف  
الملتقى.



الاثنين

١٤٤٠/١٧/١١

Monday

18/3/2019



الرجال: مدرج ٥  
بالمدرجات  
المركزية بقريقر.  
النساء: القاعة  
النسائية بقريقر.



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# الفصل ١

## برنامج المتقى

الفصل ٢

كلمة رئيس القسم

## ١٠٢ موضوع الملتقى

يلعب البحث العلمي دورا كبيرا في تطوير وتنمية المستوى الثقافي لدى الشعوب حيث أصبح السمة الأساسية في تطوير المجتمعات فهو يسعى إلى فتح الأبواب الموصدة ويربطها بالواقع تطبيقا وممارسة. من هذا المنطلق إعتزم قسم الرياضيات تنظيم لقاء تحت عنوان: اليوم العلمي و الثقافي الثاني لقسم الرياضيات بتاريخ ١٤٤٠/٢/٢٨ هجرية الموافق 6/11/2018 ميلادي. لدى القسم في هذا اليوم في نسخته الثانية أملا عريضة في إطار البحث العلمي، حيث ينتظر من أعضاء القسم الكثير من الإنجازات و الأفكار البناءة و المعمقة القابلة للإبتكار، ناهيك عن نشر البحوث في مجالات عالمية معتبرة. أملا بأن يكون للقسم المزيد من التميز و أن يكون بحد ذاته مرجعا و يقوم بدور إعلامي ثقافي إضافة لدوره العلمي الرائد.

## ٢٠٢ المحاور

سيتم التطرق في هذا الملتقى إلى تخصصات مختلفة في مجال الرياضيات نذكر منها الإحصاء، الجبر، التحليل والرياضيات التطبيقية.

## ٣٠٢ الأهداف

- إحتواء الأعضاء الجدد في المجموعات البحثية الموجودة في القسم
- تشجيع الباحثين وأعضاء القسم و الدفع بهم لتطوير مستقبل الرياضيات والبحث العلمي في الجامعة
- برامج شراكة مع الباحثين وطلاب الدراسات العليا
- توطين المعارف والخبرات البحثية
- إثراء العملية التعليمية لتحسين مستوى الطلاب والطالبات.

## الفصل ٣ الملخصات

Talk 1:

١٠٣ المداخلة ١

## Existence and regularity results for a class of obstacle problem with Zygmund space data

L. Aharouch

Department of Mathematics,  
College of Science King Khalid University,  
Abha, P.O.Box 61413, Saudi Arabia  
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### Abstract

In this talk, we will study the existence and regularity of the solution of two kind obstacle problems whose prototype are

$$\begin{cases} -\Delta_p u + d(x)|u|^{r-1}u + b(x)|\nabla u|^{p-1} & = f \text{ in } \Omega \\ u & = 0 \text{ on } \partial\Omega \end{cases}$$

where  $d, b$  belongs in some specific spaces and  $f$  in Zygmund space.

**AMS Subject Classification:** 35J25, 35J60, 35J65.

**Key words and phrases:** Sobolev spaces, Nonlinear elliptic problem, symetrisation, Truncations, Unilateral problems.

### References

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3. T. Del Vecchio, M. R. Posteraro, An existence result for non-linear and noncoercive problems, Nonlinear Anal. 31 (1998) 191-206.

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ملخص المداخلات

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Talk 2:

٢.٣ المداخلة ٢:

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## Semigroups and their generalizations

M. Aslam

Department of Mathematics, Faculty of Science, King Khalid University, P.O. Box 25145, Abha  
61466, Saudi Arabia.

Email: draslamqau@live.com

### Abstract

In this talk, I shall discuss some generalizations of semigroups and their ideal theory. I shall characterize some classes of semigroups (as well as of their generalizations) by the properties of their ideals.

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ملخص المداخلات

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Talk 3:

٣.٣ المداخلة ٣:

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## Secrets of the universe of numbers

M. Boulagouaz

Department of Mathematics,  
College of Science King Khalid University,  
Abha, P.O.Box 9004, Saudi Arabia  
Email: [boulag@rocketmail.com](mailto:boulag@rocketmail.com)

### Abstract

The lecture is a brief introduction to the challenges and giants of the world of numbers.

Talk 4

٤.٣ المداخلة ٤:

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## M-estimation with scale parameter for functional ergodic data

M. Attouch

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Faculty of Science King Khalid University,  
Abha, Saudi Arabia  
Email: attou\_kadi@yahoo.fr

### Abstract

This paper deals with the equivariant nonparametric robust regression estimation for stationary ergodic processes valued in  $\mathcal{F} \times \mathbb{R}$ , where  $\mathcal{F}$  is a semi-metric space. Under this consideration the almost complete convergence, with rate, of the constructed robust estimator is given. This result is obtained under a stationary ergodic process assumption, where we consider a new robust regression estimator when the scale parameter is unknown.

Unlike in standard multivariate cases, the gap between pointwise and uniform results is not immediate. So, suitable topological considerations were needed leading to changes in the rates of convergence which are quantified by entropy considerations.

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ملخص المداخلات

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Talk 5:

٥.٣ المداخلة هـ:

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## Growth and Polynomial Coefficients of Entire Function

A. Rifaqat

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Faculty of Science King Khalid University,  
Abha, Saudi Arabia  
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### Abstract

In this paper we consider the maximum of  $|f(z)|$  over a certain lemniscate instead of considering the maximum of  $|f(z)|$  for  $|z| = r$  and obtained the analogous results for the entire function. Some inequalities on the lower order and lower type in terms of polynomial coefficients.

Talk 6

٦.٣ المداخلة :٦

Convergence in law of sequences of stochastic integrals relative to weighted sums of a  $L^2$ -mixing process and Application to IGARCH models

Brahim Benaid

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Faculty of Science King Khalid University,  
Abha, Saudi Arabia  
Email: brahim.benaid@gmail.com

**Abstract**

In many recent applications, statistics are under the form of discrete stochastic integrals  $\int X_n(t)dY_n(t)$ , where  $X_n(t)$  and  $Y_n(t)$ , are two processes over some subset of reals. In this talk, we establish a basic theorem on the convergence in distribution of a sequence of discrete stochastic integrals relative to two weighted sums of a  $L^2$ -mixing process. This result extends earlier corresponding theorems in Chan and Wei (1988) and in Truong-van and Larramendy (1996). Its proof is based on the classical martingale approximation technique, and from a derivation of Kurtz and Protters theorem (1991) on the convergence in distribution of sequences of Ito stochastic integrals relative to two semi-martingales. Furthermore, various applications to asymptotic statistics are also given, mainly those concerning least squares estimators for integrated GARCH models.

**Keywords:** Stochastic integrals, convergence in distribution, asymptotic statistics, least squares estimators, GARCH model.

**References**

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ملخص المداخلات

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Talk 7:

٧.٣ المداخلة ٧:

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## Modeling Population Dynamics

A. Shaban

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Faculty of Science King Khalid University,  
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### Abstract

Mathematical methods and results have been used in and have emerged from biology or ecology because of the complexity of ecological relations. Therefore mathematical biology has become a relatively independent science. Ecology produces interesting problems, mathematics provides models and ways to understand them, and ecology returns to test the mathematical models. The function of mathematical ecology is to exploit the natural relationship between ecology and mathematics.

Talk 8:

٨.٣ المداخلة :٨

## Approximation of functions by $pq$ -analogue of Bernstein Operators

Khursheed J. Ansari

Department of Mathematics,  
Faculty of Science King Khalid University, 61413,  
Abha, Saudi Arabia  
Email:

### Abstract

In the theory of approximations, the sequence of positive linear operators plays an important role to approximate the functions. Bernstein operators were introduced by S.N. Bernstein [1] in 1912, and later it was found that Bernstein polynomials possess many remarkable properties, so new applications and generalizations are being discovered of it. Lupaş [2] was the first who introduced the  $q$ -analogue of the well-known Bernstein polynomials using  $q$ -calculus [3] and investigated its approximating and shape-preserving properties. Taking the idea of the  $pq$ -calculus introduced in [4], in this paper, we introduce a new analogue of Bernstein operators and we call it as  $pq$ -Bernstein operators which is a generalization of  $q$ -Bernstein operators. We also study approximation properties based on Korovkin's type approximation theorem of introduced Bernstein operators and establish some direct theorems. Furthermore, we show comparisons and some illustrative graphics for the convergence of operators to a function.

**Keywords and phrases:**  $pq$ -Bernstein operator; modulus of continuity; positive linear operator;

Korovkin type approximation theorem.

**AMS Subject Classification (2010):** 41A10; 41A25; 41A28; 41A36; 40A30.

### References

1. S.N. Bernstein, Démonstration du théorème de Weierstrass fondée sur le calcul de probabilités, Comm. Soc. Math. Kharkow (2), **13** (1912/1913) pages 1-2.
2. A. Lupaş, A  $q$ -analogue of the Bernstein operator, Seminar on Numerical and Statistical Calculus, University of Cluj-Napoca, **9** (1987) pages 85-92.
3. V. Kac, P. Cheung, Quantum Calculus, Springer-Verlag New York, 2002.
4. V. Sahai, S. Yadav, Representations of two parameter quantum algebras and  $p, q$ -special func-



Talk 9:

٩.٣ المداخلة ٩:

## Coran-based Multimedia Retrieval System.

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### Abstract

We outline a novel retrieval system for coran related documents. The latter will provide an efficient access to a large amount of multimedia (texts, books, images, videos, audio,...) contents through a query based retrieval or a recommender system. Key dimensions of this inquiry constitute to address these main issues: (1) indexing the multimedia contents with a focus on old manuscripts and recorded preaching, (2) specifying an ontology for the holly coran to model different semantic relationships between coran concepts, (3) defining a coran oriented recommender approach based on the outlined ontology. Aiming to contribute towards this direction, we focus on modeling a framework based on state of the arts artificial intelligence tools and approaches, mainly, neural networks modeling, deep learning based approaches and fuzzy ontologies based knowledge management.

Talk 10:

١٠٠٣ المداخلة ١٠:

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Buoyancy and metallic particle effects on an unsteady water-based fluid flow along a vertically rotating cone.

S. Saleem

Department of Mathematics,  
Faculty of Science King Khalid University,  
Abha, Saudi Arabia  
Email: [salmansaleem@hotmail.com](mailto:salmansaleem@hotmail.com)

### Abstract

This article is devoted to analyzing the effects of different types of nanoparticles, namely, copper (Cu), aluminum ( $Al_2O_3$ ) and titanium ( $TiO_2$ ), within the base fluid (water) on an unsteady mixed convection heat transfer flow over a rotating cone. This model concerns a nanofluid which incorporates only the nanoparticle volume fraction for each mentioned particle. The governing equations are solved numerically with the help of the Runge-Kutta-Fehlberg method. The influences of significant parameters, like the volume fraction of three types of nanoparticles with water as a base fluid, are reported and discussed through graphs of velocities, temperature, skin friction coefficient and reduced Nusselt number. The results are recovered for the existing literature when the contribution of nanoparticles is negligible. In conclusion it is observed that, for both assisting and opposing flow, the local Nusselt number increases with an increase of the nanoparticle volume fraction and the  $TiO_2$ -water has a higher Nusselt number when it is compared to both  $Al_2O_3$  and Cu-water.

الفصل ٤

الخاتمة

King Khalid University

College of Science



جامعة الملك خالد

كلية العلوم



Department of Mathematics

قسم الرياضيات

Second Scientific and Cultural Day of the Math. Dept.

6/11/2018

Abstracts

اليوم العلمي و الثقافي الثاني لقسم الرياضيات

١٤٤٠/٣/٢٨

ملخص المداخلات

وختاماً أتوجه بالشكر إلى كل من ساهم من بعيد أو قريب في إنجاح هذا الملتقى، للمشاركين بمدخلاتهم القيمة، واللجنة التنظيمية لهذه الفعالية البارزة في القسم. متمنياً النجاح والتوفيق للجميع.

رئيس قسم الرياضيات  
د. إبراهيم المنجي



## دعوة عامة

اليوم العلمي والثقافي الثاني لقسم الرياضيات – Second Scientific and Cultural day of the Mathematics Department

يسر لجنة البحث العلمي واللجنة الثقافية لقسم الرياضيات بكلية العلوم أن تدعوكم لحضور فعاليات اليوم العلمي والثقافي

يوم الثلاثاء 1440/2/28 هـ الموافق 2018/11/6 م

بالمدرج 5 (مبنى ب) (رجال)

(مسرح كلية العلوم) (نساء)

التوقيت	المحاضر	عنوان المداخلة	التخصص (المجموعات البحثية)
رئيس الجلسة: د. خالد الهازمي			
9.20 – 9	د. لحسن أهروش	Existence and regularity results for a class of obstacle problem with Zygmund space data	تحليل
9.40 – 9.20	د. محمد أسلم	Semigroups and their generalizations	جبر
10 – 9.40	أ. د. امحمد بلكواز	Secrets of the universe of numbers	ثقافية
10.20 – 10	د. عطوش قاضي	M-estimation with scale parameter for functional ergodic data	إحصاء
10.40 – 10.20	د. رفقات علي	Growth and polynomial coefficients of entire function	تحليل
11 – 10.40	د. إبراهيم بنعائد	Convergence in law of sequences of stochastic integrals relative to weighted sums of a $l^2$ -mixing and Applications	إحصاء
استراحة (20 دقيقة)			



رئيس الجلسة: د. متعب الغامدي			
ثقافية	Modeling Population Dynamics	د. شعبان علي	11.40 – 11.20
تحليل	سيحدد لاحقاً	د. خورشيد أنصاري	12 – 11.40
تحليل	سيحدد لاحقاً مشارك من كلية العلوم والآداب بتتومه	د. محي الدين	12.20 – 12
تطبيقية	Buoyancy and metallic particle effects on an unsteady water-based fluid flow along a vertical rotating cone	د. سلمان سليم	12.40 – 12.20
تكريم المشاركين			12.40 – 1:00
صلاة الظهر + الغداء			1:00 – 1:30

رئيس القسم

د. إبراهيم المنجحي

اللجنة المنظمة

أ.د. أحمد بشير (اللجنة الثقافية)

د. محمد أكبري علوي (اللجنة العلمية)

أ. نجود الشهري

King Khalid University

College of Science



جامعة الملك خالد

كلية العلوم



Department of Mathematics

قسم الرياضيات





## إعلان

يلعب البحث العلمي دوراً كبيراً في تطور وتنمية المستوى الثقافي لدى الشعوب حيث أصبح السمة الأساسية في تطور المجتمعات، فهو يسعى إلى فتح الأبواب الموصدة ويربطها بالواقع تطبيقاً وممارسة. من هذا المنطلق يعتزم قسم الرياضيات تنظيم لقاء تحت عنوان " **اليوم العلمي والثقافي لقسم الرياضيات**" بتاريخ 1439/6/17 الموافق 2018/3/5.

تم ترشيح التالية أسماؤهم من طرف لجنة البحث العلمي وخدمة المجتمع واللجنة الثقافية لإلقاء محاضرات في اليوم العلمي والثقافي:

- أ.د. أحمد بشير
- أ.د. محمد عبد الله أبو الذهب
- أ.د. سامح السيد أحمد حسن
- أ.د. منال القرني
- أ.د. علي لكصاسي
- د. محمد الاتربي
- د. سلمان سليم
- د. عائشة آل رائزة
- أ.د. علي محب
- د. إشفاق أحمد
- د. زوليخة بلقاسم

## مكان عقد اللقاء:

للرجال: المدرج المركزي 5 (المبنى ج).

للنساء: مسرح كلية العلوم للبنات بأبها.

## المطلوب:

المطلوب من المشاركين في هذه التظاهرة العلمية والثقافية إرسال ملخص البحث قبل يوم 1439/6/2 حتى تتمكن اللجنة المنظمة بالقيام بالإعلانات وطبع الكتيب الخاص بهذا اليوم.

## عن اللجنة العلمية والثقافية

أ.د. أحمد بشير و د. محمد اكبيري وأندى الشهري



## إعلان

يلعب البحث العلمي دوراً كبيراً في تطور وتنمية المستوى الثقافي لدى الشعوب حيث أصبح السمة الأساسية في تطور المجتمعات، فهو يسعى إلى فتح الأبواب المؤصدة ويربطها بالواقع تطبيقاً وممارسة. من هذا المنطلق يعترزم قسم الرياضيات تنظيم لقاء تحت عنوان " اليوم العلمي والثقافي الثالث لقسم الرياضيات " بتاريخ 1440/7/11 الموافق 2019/3/18. بدلاً من 1440/6/27 .

### مكان عقد اللقاء:

للرجال: المدرج المركزي 6 (المبنى ب).

للنساء: قاعة الاجتماعات بشطر الطالبات.

### المطلوب:

المطلوب من المشاركين في هذا اليوم العلمي الثقافي إرسال ملخص البحث طبقاً للنموذج المرسل حتى تتمكن اللجنة المنظمة بالقيام بالإعلانات وطبع الكتيب الخاص بهذا اليوم.

### عن اللجنة العلمية والثقافية

د/ محمد اكبيري و د/ محمد عبدالله

## **Announcement**

Nowadays Scientific research plays a major role in developing and improving the cultural awareness of nations. It has become a key feature of the evolution of societies. It seeks to open closed doors. Leading towards practices and applied experiments for a better living. From this stand point, mathematical department is organizing his colloquium "The third Scientific and cultural day" on 11/7/1440 corresponding to 18/3/2018. Instead of 27/6/1440

### **Place of the meeting:**

Men: Amphitheater 6 (Building B)

Woman: The meeting room/ Girl campus.

### **Requirements:**

The participant in this event are kindly request to send a summary of their talks before 10/6/1440 in "the Template-1440" so that the organizing committee can make the announcement and print the booklet of this meeting.

### **Organizers:**

S.R.C            C.S.C.C

## يسر قسم الرياضيات

دعوتكم لحضور المحاضرات التي يقدمها كل من :



**Alexander Bobenko**  
Visiting Professor at KAUST

HE WILL TALK ABOUT; "DISCRETE CONFORMAL MAPPINGS AND RIEMANN SURFACES: THEORY AND APPLICATIONS"

من 10 و نصف الى 12 و نصف  
يوم الخميس 28 رجب ( صباحاً )



**Helmut Pottmann**  
Professor at KAUST

HE WILL TALK ABOUT; "OPTIMIZING MESHES FOR ARCHITECTURE"

المقر مدرج 10 قريقر



King Khalid University

College of Science

Department of Mathematics



جامعة الملك خالد

كلية العلوم

قسم الرياضيات

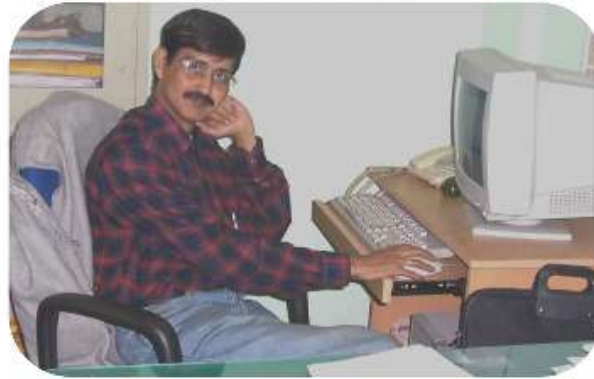
## مجموعة

Dear Colleagues, we cordially invite you to attend the lecture of

**Prof. Dr. Joydev Chattopadhyay**

Agricultural and Ecological Research Unit, Indian Statistical Institute, India

( Monday, 14 January , 2019 )



**Entitled: A study on two important diseases- Guinea worm disease and MERS COV**

**Abstract:** Guinea worm disease and MERS COV are two important diseases in African countries and Middle east countries respectively. There is neither a vaccine nor an effective treatment against the disease and therefore intervention strategies rely on the current epidemiological understandings to control the spread of the disease. Epidemiological models have proved very powerful in shaping the health policy issues. The models will be interesting if we can predict some unexpected outcomes. In this talk, I shall try to address the present situation and control measure of the two diseases.

**Place : Amphitheater 5**

**Welcome : 9-10 Am**

**Lecture : 10-11:30 Am**

**المكان : مدرج ٥**

**الاستقبال : ٩ - ١٠ ص**

**المحاضرة : ١٠ - ١١:٣٠ ص**

رئيس قسم الرياضيات  
د/ إبراهيم المنجحي

مجموعة الرياضيات التطبيقية  
التنسيق : د/ متعب الفامدي - د/ مرعي القرني - د/ شعبان علي













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Abha, March





مدير الجامعة أ.د. فالح بن رجاء الله السد

تنظم جامعة الملك خالد

دولي التاريخ للرياضات وفتياتها

التاريخ









*Thank  
You!*



