PROCEEDINGS OF ICEMEA-2022

2nd International Conference on

Essence of Mathematics and Engineering Applications

(ICEMEA-2022)

9th&10th December 2022

Convener

Dr.B.V.Appa Rao

Co-Conveners

Dr.T.Nageswara Rao

Dr.G.Charan Kumar

Dr.K.Rajya Lakshmi

In collaboration with A. P. Science City, Andhra Pradesh,
State Counsel for Science and Technology (APCOST), Andhra Pradesh
and

Department of Mathematics, KoneruLakshmaiah Education Foundation,

Vaddeswaram-522301, Guntur, Andhra Pradesh

PREFACE

KoneruLakshmaiah Education Foundation, Vaddeswaram,Guntur is organizing a multi-disciplinary 2nd International Conference entitled "ESSENCE OF MATHEMATICS AND ENGINEERING APPLICATIONS (ICEMEA-2022)" in blended mode on 9th & 10th December, 2022 has provided a global platform bringing Academia, Researchers, Engineers, Industry personnel and Students together to share their knowledge, work and experiences both through the presentations from the conference and dissemination of high quality research publications in the areas of Mathematics and Science. This acts as an international forum for online interactions with eminent speakers and renowned experts about the recent innovations, trends and concerns as well as practical challenges encountered and solutions adopted in the field of Mathematics and Science.

We are earnestly thankful to our Management, Vice-Chancellor,Pro-VC's,Dean-R &D,Director-FED,Coordinator-FED, Chair Persons and Members of various committees, International and National Advisory Committees for their wholehearted support and encouragement.

We are also thankful for all the authors who have contributed their research findings to the conference. We truly believe that the participants will find the discussions fruitful and will appreciate the opportunity for setting up future collaborations.

CONVENER

CONTENTS

ABOUT THE K L E F

The Koneru Lakshmaiah Charities were established as a trust in the year 1980 with its official address at Museum road, Governorpet, Vijayawada and started KL College of Engineering in the Academic year 1980-81. The trust was converted into a Society by the name Koneru Lakshmaiah Education Foundation in the year 1996. The KL College of Engineering has attained autonomous status in the year 2006 and the Koneru Lakshmaiah Education Foundation Society was recognized as Deemed to be University offering academic programs at UG, PG, Doctoral and Post-Doctoral levels in February 2009. The University is recognized by the All India Council for Technical Education (AICTE), New Delhi, has been accredited by the National Board of Accreditation (NBA), and is certified by ISO 9001-2015. It has been accredited by National Assessment and Accreditation Council (NAAC) with A++ grade with 3.57 CGPA on 4-point scale. The vision of the institution is to be a globally renowned university and the mission is to impart quality higher education and to undertake research and extension with emphasis on application and innovation that cater to the emerging societal needs through all-round development of students enabling them to be globally competitive and socially responsible citizens with intrinsic values.

ABOUT THE DEPARTMENT

The Department of Mathematics focuses on Pure and Applied Mathematics catering to the professional needs of students of varied backgrounds. The Department is offering courses for students majoring in Science, Engineering, Commerce and Business Administration and so on. The Department is offering M.Sc. Program in Applied Mathematics and Research Program leading to Ph.D.

LOCATION

The KL Deemed to be University is located at Green fields, Vaddeswaram, Guntur District, Andhra Pradesh in a 100 acre green campus abutting Buckingham Canal about 9 km from Vijayawada railway station and bus stand. Vijayawada is located on the banks of river Krishna in the state of Andhra Pradesh. The city is well connected by National Highway and railways with Chennai (440km), Hyderabad (275km) and Visakhapatnam (385km). The city is the gateway for trains running from North to South India. Vijayawada is well connected by daily flights from the cities Visakhapatnam, Hyderabad, Chennai, Bangalore and New Delhi.

PRESIDENT'S MESSAGE

An engineer needs to use mathematics and apply science for engineering solutions to many problems pertaining to different disciplines.

Proper knowledge of mathematics is the prime requisite for engineering applications. An engineer must know general purpose mathematics and mathematics related to a specific discipline. An engineer having clear knowledge of the mathematics will be able to find solutions to the problems that are to be solved with minimum cost and time.

I am happy that the Department of Mathematics, KLEF is organizing two day International Conference on "Essence of Mathematics and Engineering Applications(ICEMEA-2022)" which is quite apt for every engineering/non engineering student. Discussions and presentations on this topic should bring out various present day usages of Mathematics using which one will be able to find solutions to Real-world problems.

I wish the organizers good luck for successfully conducting the International Conference and come out with the proceedings and recommendations which can be circulated to all the engineers for their knowledge and usage of the findings.

Er. KONERU SATYANARAYANA
PRESIDENT

VICE-CHANCELLOR'S MESSAGE

I extend my warm welcome to all the participants and appreciate the Department of Mathematics, KLEFDeemed to be University for their commitment and superb drive in organizing this **Two-Day International Conference on "Essence of Mathematics and Engineering Applications(ICEMEA-2022)".** Conferences are the platforms for academic discourse. I am certain that this platform proves to be a great opportunity for the researchers, postgraduate students and industrial people for strengthening their academic and research aspirations. I believe in the virtual discussions and findings which can be generated only through these kinds of research and improve (R&D) activities.

Mathematics is a rapidly growing interdisciplinary branch that incorporates many new advances in Computer Science and has applications in other sciences and industry. The deliberations of the delegates will undoubtedly generate lots of interesting and innovative concepts which pave the way to industrial commercialization. I extend my best wishes to the research scholars and faculty who are a part of our University and to those who seek to join us in this conference for sharing and gaining knowledge. I am sure that you will feel proud of sharing your academic excellence in our vibrant campus and wish you all a grand success.

PROF.G.P.S.VARMA
VICE-CHANCELLOR

PRO-VICECHANCELLOR'S MESSAGE

I am happy to know that the Department of Mathematics is organizing the Two-day International Conference on "Essence of Mathematics and Engineering Applications (ICEMEA-2022)" from 9-10,December 2022.

Several specialists from IITs, NITs and International Professors are participating and contributing on several challenging Industrial problems and solutions in the conference.

The Two Day Conference is sure to provide a rich experience to the young researchers who can exchange ideas and learn from the expert participants and work towards greater achievements useful to the research community.

I wish all the delegates to interact and participate in all sessions to accomplish scientific breakthroughs.

I wish the conference a great success.

PROF.N.VENKATRAM
PRO-VICECHANCELLOR

REGISTRAR'S MESSAGE

I congratulate the Department of Mathematics of KLEF Deemed to be University in organizingthis ***Two-Day International Conference "Essence of Mathematics and Engineering Applications(ICEMEA-2022)".*** I am sure that this conference becomes a right platform for the students, researches and industrial delegates to come up with innovative deliberations. Mathematics has become more and more international, and solidarity across countries which has been increasing at a fast pace. It is not just a language of science, but it is also a science of formulating theories for other sciences. Besides fundamental research, the importance of the interaction of mathematics with other areas of science, computers and industry is now largely in demand.

I whole heartedly appreciate the efforts of the organizers of the Department of Mathematics for coming forward with such a challenging theme of contemporary relevance. I hope that this conferencewill definitelybecome a landmark event infacilitating knowledge exchange and research discourse. I wish all the participants of the conference to come up with useful research deliberations.

PROF.A. JAGADEESH
REGISTRAR (I/C)

FED COORDINATOR'S MESSAGE

It is quite gratifying to note and with great pleasure, I would like to state that the Department of Mathematics is hosting its 2nd International Conference on Essence of Mathematics and Engineering Applications (ICEMEA-2022) on 9-10, December 2022. Organizing such an event at this point of time reinforces our objective of developing an environment for the exchange of ideas towards technological developments.

I wish the conference would be able to deliberate on current issues of national and international relevance, particularly in the field of Mathematics Application, Game Theory Models and towards Engineering Applications. There have been unprecedented numbers of quality papers that are to be presented in the conference. I am sure that this occasion will provide an affable environment for the researchers and academicians to freely exchange the views and ideas with others.

I convey my warm greetings and felicitations to the organizing committee and the participants and extend my best wishes for the grand success of the conference.

PROF.M.S.G.PRASAD
FED COORDINATOR

CONVENER'S MESSAGE

On behalf of the 2nd International Conference on Essence of Mathematics and Engineering Applications (ICEMEA-2022), I welcome all the invited keynote speakers, session chairs, paper presenters and participants. It is my great pleasure to serve as Convener for the conference being organized at our University. I hope this conference provides blended mode lively events where the researchers and practitioners from various parts of the world join together to discuss a wide array of important issues in Mathematics and Science.

The theme of conference "Essence of Mathematics and Engineering Applications" is purposely broad so that we could have an eclectic array of papers ranging over a variety of the mess including such topics as innovative research practices, learning sciences, and utilization of technology in the present scenario. We have received 89 papers from the authors in different fields all over the globe.

I hope during your stay at the conference will provide an opportunity to engage with distinguished peers to discuss your ideas for research and practice.

PROF.B.V.APPA RAO
CONVENER-ICEMEA-2022

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Program Schedule
2ⁿᵈ International conference on ESSENCE OF MATHEMATICS AND ENGINEERING APPLICATIONS
(ICEMEA-2022)
9ᵗʰ December, 2022

Venue: Jasmine hall

Time	Event
08.30 AM to 9.30 AM	Registration
9.30 AM to 10.30 AM	Inauguration **Key Note Address by** **1.Dr Y Aparna** **Member Secretary** **Andhra pradesh state council of Science and Technology(APCOST)** **A.P, India** **2.CEO AP Science city** **Dr K Jayarami Reddy**
10.30 AM to 10.45AM	*Tea break*
10.45 AM to 12.15 PM	**Plenary Talk by** **Mr. Nagesh Baliwada** **Sr Manager, Amazon Advertising** **Topic:**Applications of Mathematics in the Technology Industry (experimentation, machine learning).
12.15 PM to 1.15PM	**Plenary Talk by** **Dr B. Nageswara Rao** **Rtd. Scientist ISRO, Trivendrum**
1.15 P.M to 2.15 P.M	*Lunch break*
2.15.00 PM to 3.15 PM	**Paper presentations**
3.15 PM to 3.30 PM	*Tea Break*
3.30 P M to 5.00 PM	**Paper presentations**

Program Schedule
2nd International conference on ESSENCE OF MATHEMATICS AND ENGINEERING APPLICATIONS
(ICEMEA-2022)
10th December, 2022

Venue: Jasmine hall
Koneru Lakshmaiah Education Foundation, Vaddeswaram, Guntur (Dt), Andhra Pradesh

Time	Event
9.30 AM to 10.30 AM	**Plenary Talk by** **Prof. RAVI P AGARWAL** *Professor* *Department of Mathematics* *MSC 172 Texas A&M University-Kingsville, USA* **Topic:** Singular Boundary Value Problems With Real World Applications
10.30A.M to 12.00PM	**Plenary Talk by** Dr. Natesan Srinivasan Professor, Department of Mathematics Indian Institute of Technology, Guwahati
12.00 to 12.15PM	**Break**
12.15 PM to 1.15PM	**Plenary Talk by** Dr. Rehena Nasrin Professor &BPGS Secretary Department of Mathematics,Faculty of Science Bangladesh University of Engineering and Technology
01.15 PM to 2.15 PM	*Lunch*
2.15 PM to 3.00PM	*Paper Presentations*
3.00 PM to 3.45 PM	**Plenary Talk by** Dr. Susheel Kumar Joshi Assistant Professor, Department of Computational Science & Humanities, Indian Institute of Information Technology, Kottayam, Kerala.
3.45PM to 4.00PM	**Closing Remarks by CEO AP Science city** **Dr K Jayarami Reddy**
4.00 PM to 5.00PM	**Valedictory**

INVITED TALKS

Prof. RAVI P AGARWALProfessor

Department of Mathematics

MSC 172 Texas A&M University-Kingsville,USA

MATHEMATICAL CONTRIBUTIONS OF RAVI P. AGARWAL

ERDAL KARAPINAR

Abstract

The aim of this note is to give a brief summary of the contributions by Ravi P. Agarwal to the field of Mathematics.

Dr.S Kumar Joshi

Associate Professor

Department of Mathematics, IIIT, Kerala

Swarm intelligence-based optimization algorithms.

Optimization belongs to almost every domain of science, research, and technology. It provides a common framework to model a broad range of problems through the objective function and some specific constraints. Derivative information plays a significant role in the optimization process by providing the directions of the optimal regions. However, the non-differentiable objective functions restrict the derivative-based optimization algorithms into their limitations. **Fortunately, the** swarm-based meta-heuristic algorithms effectively deal with this issue through their inherent non-derivative search mechanisms. As a result, these algorithms find several real-world applications in all scientific domains. In recent days, these algorithms are playing a central role in the development of several AI technologies.

Dr. RehenaNasrin

Professor,Department of Mathematics, Faculty of Science

Bangladesh University of Engineering and Technology, Bangladesh

Numerical Modeling of Bioheat Transfer and Electric Current to Ablate Hepatic Tumor

Department of Mathematics, Bangladesh University of Engineering and Technology, Bangladesh
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ABSTRACT

Ablation therapy reduces the risk factor of cancer repeating, destroys small size liver tumor without removing it. This therapy is a good treatment for patient especially when surgery not possible. Athree-dimensional numerical modeling of bioheat transfer and electric currenthas been conducted to ablate a hepatic tumor where the physical model includes a four-tinyradiofrequency probe, a hepatic tissue, and a large blood vessel. The finite element method of Galerkin's residual has been utilizedto solve the governing partial differential time dependent equations with proper finite element meshing of tetrahedral elements consisting of ten nodes. A good convergence of the iterative scheme has been set in the determination of the distribution of tissue temperature during radiofrequency (RF) hepatic tumor ablation through the heated targeted cells that are supposed to kill, and the healthy surrounding tissues are supposed to save. The mathematical reproduction is led for various times from 0 s to 1000s and electric voltage from 22 V to 50 V. The numerical outcomes have been expressed graphically in terms of temperature fields at different times, iso-surfaces with temperatures of 50°C at various times, iso-surfaces at different temperatures, and the temperature distribution over time. Temperature distribution against time at the tip of one of the electrodes arms at a fixed voltage and various voltages have been also demonstrated. Results from the RF simulation indicate that temperature increases due to increasing time of ablation of tumor and electric voltage. The tumor cell is killed approximately at 50°C with 22 V after 480s heating. The proposed model may be a new tool for physicians for the efficient thermal insulation of tumors without any significant damage in healthy tissues.

Nagesh Balivada

Sr. Manager, Amazon Advertising ,SanFrancisco,USA

Applications of Statistics in Experimentation and Machine Learning

ABSTRACT

I will introduce key statistics concepts leading up to Central Limit Theorem, we will use demoes to understand these concepts intuitively. We will introduce core concepts of frequentist framework of experimentation. We will then walk through two real world business problems from Technology Industry. To illustrate the importance of mathematics to technology industry, we will apply the concepts introduced so far to address these problems. We will end with more business use cases of statistics in Machine Learning.

Prof.Natesan Srinivasan

Professor, Department of Mathematics

Indian Institute of Technology Guwahati (IIT Guwahati

Super convergence of Discontinuous Galerkin Method with Interior Penalties for Singularly Perturbed Boundary-Value Problems

ABSTRACT

Here, first, we focus on the discontinuous Galerkin method for two-point boundary-value problems of second-order ordinary differential equations. Also, we introduce the concept of superconvergence for two-point BVPs. Then, we study the superconvergence properties of the discontinuous Galerkin method for singularly perturbed BVPs of reaction-diffusion and convection-diffusion types. By using piecewise polynomials of degree k on the modified Shishkin mesh, superconvergence error bounds of order $O(k+1)$ in the discrete energy norm are established. Then, we extend these results to singularly perturbed two-dimensional elliptic BVPs. Finally, the convergence resultsare verified numerically through several examples.

ABSTRACTS

ICEMEA-01

CONTROLLABILITY WITH CONSTRAINED DYNAMIC LYAPUNOV SYSTEM ON TIME SCALES

A. Sreenivasulu[1] and B. V. Appa Rao[2], and CH. Harisha[3]

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ABSTRACT: The current paper is about the investigation of Controllability for linear control time-varying system is analysed in the context of convex target sets on time scales. local controllability with constrained controllers for sufficient conditions and Necessary conditions of dynamic Lyapunov system on time scales. We use the separation theorem used to obtain the main results.

Keywords: controllability with constrained control; separation theorem; time-varying control system; time scale.

ICEMEA-02

ON A PRIME RADICAL OF NEARRINGS WHICH IS KUROSH-AMITSUR

Jaya Lakshmi Narayana Kilaru[1], V.B.V. N .Prasad[2], Srinivasa Rao Ravi[3]

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[3]Department of Mathematics, University college of Sciences, Acharya Nagarjuna University, Nagarjuna Nagar- 522510, Guntur(Dist), Andhrapradesh,India.

Abstract: A prime radical of near-rings is introduced by defining a new class of prime modules of near-rings. It is a generalization of the Prime radical of rings. Properties of the radical are studied. It is established that this radical is a Kurosh-Amitsur radical of near-rings.

2020 Mathematics Subject Classification 16Y30

Keywords: and Phrases. Right Nearring,Prime right N-group, Prime N-groups of Type2, Right Prime radical of Type-2, Kurosh-Amitsur radical.

A CASE STUDY ON THE EFFECT OF MOONLIGHTING BY IT INDUSTRIES AMONG EMPLOYEES: AP

[1]K. V. Ramesh Babu, [2]D. Sravani, [3]Shaik Galeeb

[1]Assistant Professor, Department of BS&H, QIS College of Engineering and Technology, Ongole

[2]Assistant Professor, Department of Strategic Finance, Loyola Academy, Secunderabad.

[2]Assistant Professor, Department of MBA, QIS College of Engineering and Technology, Ongole

Abstract: The main purpose of this paper is to find out the effect of moonlighting among employees in IT industry. Many financial problems have arisen in the IT sector due to Corona. As part of this, IT companies choose various ways to reduce their costs. As part of this, the new method they chose was moonlighting. Moonlighting is a new problem that is bothering IT employees a lot. For this research, we have used convenient sampling method to collect data. As a part of this, we have conducted a survey. In this, the opinion of IT employees was taken. In this paper tabulation, analysis was done after collecting the data. In this research paper we have analysed whether the concept of moonlighting is right or wrong in bringing among employees. Apart from that, in this paper we discussed the reasons why the employees are effected by moonlighting and finally we came to a conclusion.

Key words: IT Industry, financial crisis, employee, moonlighting, sampling.

ASSESSMENT OF OPTIMIZERS AND THEIR ACCURACY IN AUTOSEGMENTING LUNG TUMORS

Prabhakar R, T Eswarlal

Department of Mathematics, KL University, Guntur, Andhra Pradesh

Aim: The aim of this study is to assess the accuracy of different optimizers used to autosegment lung cancer volumes on thoracic computed tomography (CT) images used in oncology.

Methods and Materials: To assess the performance of optimizers on thoracic CT datasets downloaded from cancerimagingarchive.net and fifty pre-contoured CT images were used in this study. The entire dataset is divided into training, validation, and test datasets. The thorax CT images, and pre-processed lung tumor CT masks were used as input and output datasets. The 2D-Unet architecture was used to produce the autosegmentation model. Seven different optimizers were employed including stochastic gradient descent (SGD), adaptive gradient (AdaGrad),AdaDelta, RMSprop, Nadam, Adamax, and Ftrl to assess the accuracy of the autosegmentation model. In addition to accuracy, the intersection of union (IOU) was used to assess the model performance.

Results: Of all the eight optimizers, the Adam, RMSprop, Nadam, and Adamax were found to show an IOU of greater than 80% whereas AdaDelta was found to produce the worst results.

Keywords: Deep learning, optimization algorithm, computed tomography, autosegmentation

SUPER FIBONACCI PRIME GRACEFUL LABELING OF GRAPH

G. Megala[1] and K. Annadurai[2]

[1]Research Scholar, Mother Teresa Women's University, Kodaikanal, Dindigul, Tamil Nadu, India. Guest Lecturer, Department of Mathematics, M.V. Muthiah Government Arts College for Women, Dindigul, Tamil Nadu, India.

[2]Department of Mathematics, M.V. Muthiah Government Arts College for Women, Dindigul, Tamil Nadu, India.

Abstract: We derive new labeling called Fibonacci prime graceful labeling. A graph G on q edges is Fibonacci prime graceful if the vertices can be labeled with distinct integers from the set $\{1, 2, 3, ..., F_{q+1}+a\}, a \in \mathrm{N} \cup \{0\}$, such that the labels assigned to each pair of adjacent vertices are relatively prime and if the edge labels obtained by absolute differences of the labels of the adjacent vertices are first q distinct Fibonacci numbers, that is, $\{F_1 = F_2, F_3, F_4, ..., F_{q+1}\}$. A Fibonacci prime graceful labeling is super if the vertex labels are allowed to be distinct Fibonacci numbers from the set $\{F_2, F_3, F_4..., F_{q+2}\}$. We investigate some classes of graphs which admit Fibonacci prime graceful labelin

ANALYSIS OF MHD CASSON BOUNDARY LAYER NANOFLUID FLOW OVER POROUS STRETCHING SURFACE WITH THE EFFECTS OF RADIATION AND CHEMICAL REACTION

[1]A.Sandhya, [2]G.Venkata Ramana Reddy
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Abstract: In this article numerical analysis of incompressible, two dimensional and mixed convective MHD Casson fluid flows over a stretching surface with porosity under the influence of radiation and chemical reaction as well as viscous dissipation considered. By utilizing suitable similarity analysis, the governing PDEs (Partial differential equations) with its respective boundary conditions were transformed to dimensionless forms. The resulting ODEs (Ordinary differential equations) along with corresponding boundary conditions were solved via shooting technique combined with Runge-kutta-Fehlberg method. The outcomes of this study illuminates that velocity, temperature and concentration fields decreases due to the thickness of the boundary layer as we go away from the stretching sheet surface and falling of velocity observed in Casson fluid parameter. Under some restriction the resultant outcome were compared with previous published results and is found in admirable agreement.

Keywords: MHD nano-fluid, stretching sheet, chemical reaction parameter, Eckert number, velocity slip parameter, convective boundary.

SOME APLICATIONS OF THE REPRODUCING KERNEL METHOD

Ali Akgül[1], G.V. Ramana Reddy[2]

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Abstract: In this work, we present the history of the reproducing kernel Hilbert space method in details. We give the applications of the method to the fractional differential equations with different kernels. We apply the reproducing kernel Hilbert space method to the fractal fractional differential equations. We use the integral transforms to get the exact solutions of the problems. We compare the exact solutions with the approximate solutions. We demonstrate our results by some tables and figures. We prove the efficiency of the proposed technique for fractal fractional differential equations.

MULTIPLE ENCRYPTION METHOD USING TREES VIA FIBONACCI MATRICES

Triveni Domada[*], Dr.S Ashok Kumar, Gudela Ashok, Dr. D Chaya Kumari
Gayatri Vidya Parishad College for Degree and P.G.Courses(A), Andhra Pradesh, India.

Abstract: Multiple encryptions refer to the use of two or more separate levels of encryption to guard against the compromise of any single layer of encryption. Using multiple layers of encryption reduces the risks associated with data encryption. In this paper, the proposed work is multiple encryptions method that encrypt plain text by annihilating the graph theory features of trees, Fibonacci matrices and affine transformations. We can extend this multiencryption method to public key cryptography.

ICEMEA-09
ENTROPY GENERATION MINIMIZATION OF HIGHER-ORDER ENDOTHERMIC/EXOTHERMIC WITH ACTIVATION ENERGY ON MHD

Kolli Vijaya[1, a *], Gurrampati Venkata Ramana Reddy[,b]

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Abstract: The present investigation aims to analyze higher-order endothermic/exothermic with activation energy by considering thermophoresis and Brownian motion effects on MHD mixed convective flow across a vertical stretching surface. The influence of velocity, temperature and concentration slip along with an external magnetic field is also considered. The governing coupled non-linear partial differential equations are transformed into ordinary differential equations using similarity transformations. The resulting system of non-linear ODE is solved by the Newton Raphson Shooting technique using RK-fourth order method. The impact of various physical parameters discovered in the problem namely, The impact of various physical parameters discovered in the problem namely, endothermic/exothermic reaction variable thermophoresis parameter, activation energy parameter, Brownian motion have been analyzed on velocity profile, temperature profile and concentration profile. The effects of these parameters on skin fraction coefficient, Nuselt number and Sherwood number are displayed in tabular form as well as surface plots form. The impact of various physical parameters appeared in the entropy generation is shown using surface and contour plots.

ICEMEA-10

RESULTS ON CONTROLLABILITY OF VOLTERRA INTEGRO-DYNAMICAL INCLUSION SYLVESTER MATRIX WITH IMPULSIVE SYSTEM ON TIME SCALES

CH. Harisha[1], B. V. Appa Rao[2], and A. Sreenivasulu[3]

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Abstract: In this paper, we study the results on controllability for a Volterra integro-dynamical inclusion Sylvester matrix with the impulsive system on time scales. We convert the Volterra integro dynamical inclusion Sylvester matrix with the impulsive system on time scales to an equivalent Kronecker product of Volterra integro dynamical inclusion with the impulsive system on time scales using the vectorization operator. We establish the main results for Dhage have been used in the Fixed-point theorem for multivalued maps. Furthermore, we demonstrate results on controllability for the nonlocal problem taken.
Keywordsandphrases. Dynamicalinclusion,controllability,time scales,impulses

2010 AMSMathematicssubjectclassification.34A60,93B05,34N05, 34A37.

MATHEMATICAL MODELING AND ANALYSIS OF COVID-19: A STUDY OF NEW VARIANT OMICRON

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Abstract: We construct a new mathematical model to better understand the novel coronavirus (omicron variant). We briefly present the modeling of COVID-19 with the omicron variant and present their mathematical results. We study that the Omicron model is locally asymptotically stable if the basic reproduction number R0<1, while for R0≤1, the model at the disease-free equilibrium is globally asymptotically stable. We extend the model to the second-order differential equations to study the possible occurrence of the layers(waves). We then extend the model to a fractional stochastic version and studied its numerical results. The real data for the period ranging from November 1, 2021, to January 23, 2022, from South Africa are considered to obtain the realistic values of the model parameters. The basic reproduction number for the suggested data is found to be approximate R0≈2.1107 which is very close to the actual basic reproduction in South Africa. We perform the global sensitivity analysis using the PRCC method to investigate the most influential parameters that increase or decrease R0. We use the new numerical scheme recently reported for the solution of piecewise fractional differential equations to present the numerical simulation of the model. Some graphical results for the model with sensitive parameters are given which indicate that the infection in the population can be minimized by following the recommendations of the world health organizations (WHO), such as social distances, using facemasks, washing hands, avoiding gathering, etc.

Keywords: Mathematical model, Omicron, Stability analysis, Estimation of parameters, Numerical results and discussion

EULERIAN CIRCUIT ON BALANCED COMPLETE BIPARTITE GRAPH OF BIPOLAR FUZZY GRAPH

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Abstract: The main aim of this research work is to study Balanced Complete Bipartite Graph on Crisp Graph further, we extended Balanced Complete Bipartite Graph in terms of Fuzzy Graph of Bipartite Graph and Bipolar Fuzzy Graph of Bipartite Graph. Also, we proposed Even Vertices of Balanced Complete Bipartite Graph of (**BC-Bi)** Crisp Graph**(CG)**, Fuzzy Graph**(FG)** andBi-polar Fuzzy Graph **BFG**.

KeywordsFuzzy Graph, Bi-polar Fuzzy Graph, Bipartite Graph, Complete Bipartite Graph, Balanced Complete Bipartite Graph and Eulerian Path.

ICEMEA-13

EFFECTS OF CHEMICAL REACTION ON SISCO NANOFLUID OVER A WEDGETHROUGH PERMEABLE MEDIA

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Abstract: In the present article, effects of chemical reaction on sisco nanofluid over a wedgethrough Permeable media. Permeability and Chemical reaction are also taken into account. The dimensionless ordinary differential equations are produced by applying sufficient similarity variables to the governing partial differential equations. In order to solve the transformed system of PDEs using MATLAB software, RK-Fehlberg with shooting method is used. Impacts of thermophoresis, Brownian motion, Magnetic field, radiation, heat source parameter, the profiles of velocity, temperature, nanoparticle concentration are explored in the graphs. Numerical results for the effects of different pertinent parameters on local skin friction coefficient, local Nusselt number and Sherwood number were tabulated.

ICEMEA-14

MAGNETIC DIPOLE AND MIXED CONVECTIVE EFFECT ON FERROMAGNETIC MICROPOLAR HYBRID NANOFLUID FLOW

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Abstract: The purpose of the current endeavor is to analyze the impact of mixed convection and magneticdipole in flow of ferromagnetic micropolar hybrid nanofluid past a shrinking wall. Apposite similaritytransformations are utilized to transform the partial differential equations into the relevant nonlinearordinary differential equations. The acquired differential system is solved numerically with the helpof shooting method. Dual solutions have been found. Critical values for shrinking parameter andsuction/injection parameter have been obtained. The influence of emanating variables that appearedis observed on temperature and velocity fields through graphs and tables. Analysis shows a sufficientamount of suction is required for the flow to be feasible.

Keywords: Ferromagnetic Micropolar Hybrid Nanofluid, Magnetic Dipole, Dual Solutions, Mixed Convection

A NEW SIMILARITY MEASURE OF PYTHAGOREAN FUZZY SET AND ITS APPLICATIONS

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Abstract: As an extension of Intuitionistic Fuzzy Set, Pythagorean fuzzy set is an effective and flexible mathematical tool to express the imprecise information of real-life applications. The constraint of Pythagorean fuzzy set is that the sum of quadratic power of the membership degree and the quadratic power of the non-membership degree is bounded to unit interval. Under this environment, a new similarity measure is introduced with its advantages over existing similarity measures. The proposed similarity measure is applied in the field of medicine for diagnosis and pattern recognition, which proves the effectiveness of the proposed measure.

Keywords: Intuitionistic Fuzzy Set, Pythagorean fuzzy set,similarity measures.

JOULE HEATING EFFECT ON CATTANEO-CHRISTOV HEAT FLUX ON CHEMICALLY REACTING NANO FLUIDS FLOW OVER A STRETCHING SHEET

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Abstract: This paper examined the significance of Cattaneo-Christov theories on the flow of chemically reacting fluid past a stretching surface with thermos physical parameters. The mathematical modeling of the physical problem was represented by partial differential equations. The set of partial differential equations was simplified by employing a suitable similarity variable to obtain system of coupled nonlinear ordinary differential equations. The transformed equations were later solved using the spectral relaxation method. The spectral relaxation method employs the basic concept of the Gauss-Seidel relaxation techniques. The outcome from this method was presented in graphs and tables. The thermal radiation parameter was found to enhance the velocity and temperature distributions. Also, the effect of magnetic field parameter was found to decline the velocity profile. It was found that the Brownian motion parameter greatly influences the velocity as well as temperature profiles.

Keywords: **Cattaneo-Christov Heat Flux, MHD, Joule Heating.**

FUZZY FILTERS OF A PO TERNARY Γ- SEMI GROUP

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Abstract: We introduced the notions of fuzzy left (right) filter of a PO ternary Γ- semi group, proper fuzzy filter and fuzzy left (right) filter of a PO ternary Γ- semi group generated by a fuzzy subset. It is showed that the disjoint collection of two fuzzy left (right) filters of a PO ternary Γ- semi groups is also a fuzzy left (right) filter and fuzzy filter of T, fuzzy filter of T generated by a fuzzy subset and showed that the disjoint collection of two fuzzy filters of T is also a fuzzy filter.

Keywords: CFPI, fuzzy filters, completely semi prime, CFSPI.

FINITE M/M/1 QUEUE WITH TWO-CLASS ARRIVALS, STATE DEPENDENT SERVICE, MULTI-SERVERS AND CUSTOMERS IMPATIENCE

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Abstract: This paper deals with the finite Markovian queueing system with multi server facility and customer impatience. We considered two-class customers with heterogeneous arrival rates and state-dependent service. Entry and service times are considered in a fashion of Poisson process and exponential distribution respectively under first-come-first-serve basis. Transient state probabilities as well as some performance indices have been calculated. We have presented the results of sensitivity analysis and observed the impact of various parameters on system's constants.

Key words: Two-class customers, Balking, Reneging and multi-server facility

A NOTE ON IDEALS OF GAMMA SEMI NEARRINGS

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Abstract: Algebraic systems with binary operations of addition and multiplication satisfying all the ring axioms except possibly one of the distributive laws and commutativity of addition are called nearrings. Algebraic systems which are closed and associative under two operations, usual addition, multiplication, and which satisfy both distributive laws are called Semirings. A Semi nearring is an algebraic system which is generalization of both a near ring and a semiring. A Semi nearring S is an algebraic system with two binary operations usual addition and usual multiplication such that S forms a semigroup with respect to both the operations, and satisfies the right distributive law. We consider the algebraic system gamma semi nearring and idealsof gamma semi nearrings are considered and some related results are proved.

Keywords: near-ring, semi near-ring, ideal.

MHD RADIATIVE CASSON NANOFLUID FLOW OVER A NANOPARTICLE FLUX

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ABSTRACT: In the present article, the influence of suction/ injection and Magnetic field on forced convective flow Casson Nanofluid over a permeiable plate with radiation and chemical reaction. Zero nanoparticle flux at the boundary is assumed. Using suitable similarity transformations the guiding PDE's are transformed to nonlinear ODE's and corresponding gare compared with existing literature and fine agreement is observed. The heat and mass transfer characteristics are analysed by constructing profiles corresponding to all parameters involved in the problem. Enhancing Magnetic parameter velocity and concentration increases and temperature of fluid diminishes. For incremental observations of thermophoresis parameter temperature increases and concentration decreases.Rate of mass transport diminishes for higher values of Brownian motion parameter and Lewis number.

Keywords: Casson Nanofluid, Viscous dissipation, Chemical reaction, Radiation, Porous media, Suction/Injection

ICEMEA-21

AN EOQ MODEL OF HYBRID TYPE DEMAND FOR NON-INSTANTANEOUS DETERIORATING ITEMS WITH PRESERVATION TECHNOLOGY AND EFFECT OF INFLATION DURING COVID-19

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Abstract: We all know that covid-19 is the global pandemic. It is first of all originated in Wuhan city china in late December of 2019. During this period price factor play an effective role in customers behavior in the world affected by pandemic. This paper purpose is to develop a feasible model to think different aspects of the Covid-19. We develop an EOQ model for deteriorating items and deterioration type is non-instantaneous. In this research, we used preservation technology to control deterioration. Demand function dependent on stock and selling price and whole study carried out under the effect of inflation. The shortages are permitted in lead time and partially backlogged. Sensitivity analysis and graphical representation solved by software MATHEMATICA 7.0.

Keywords: Hybrid demand, deterioration, Covid-19, inflation, shortages

ICEMEA-22

SOFT INTERSECTION BOOLEAN NEAR SEMI-RINGS

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Abstract: We begin by defining Soft intersection boolean near semi ring (SIBNSR) using set intersection in this paper. Because it demonstrates how a Soft set affects a Boolean near ring (BNSR) structure via set intersection and inclusion."This new concept can be thought of as a link between set theory, soft set theory, and also near-ring theory. Using illustrative examples, the basic properties are then deduced". In addition, we obtain some Soft int Boolean near ring (SIBNSR) analogues of classical BNSR theoretic concepts and show how to apply SIBNSR to BNSR theory.

Keywords: Soft int sub Boolean near semi ring(SISBNSR),Soft int Boolean Ideal(SIBI), Right Soft int Boolean Ideal (RSIBI), Left Soft int Boolean Ideal (LSIBI).

HEAT AND MASS TRANSPORT CHARACTERISTICS OF MHD NANOFLUID FLOW OVER EXPONENTIAL STRETCHING SURFACE

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Abstract: This study investigates heat rate and mass transfer in nanofluid flow in an exponential stretching surface with generation of heat. Separate conditions have been analyzed in the present study in the exponential order. It can be easily observed that fundamental laws of motion and heat transfer. The transformation is used to transforms the proposed equation into nonlinear ordinary differential equations. Further, numerical analysis is done to validate analysis. Graphically, all analytical results are validated. It suggests that rate of heat transfer decreases with increase of Brownian motion.

DOMINATING FUNCTIONS OF CORONA PRODUCT OF COMPLETE GRAPH WITH PATH GRAPH

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Abstract: Domination theory is an important branch in graph theory. It has many applications in communication, engineering and other fields of science. In a graph $G(V, E)$, a set $D \subseteq V$ is said to be a dominating set of the graph G if every vertex in $V - D$ is adjacent to some vertex in D. If there is no proper subset of D that is a dominating set of G, then D is called a minimal dominating set. There are various graphs operations in which product is one of them. A graph product is a binary operation on a set of graphs. Corona product of graph G and graph H is the graph $G \odot H$, where graph G has n vertices and e edges. Graph H has m vertices and t edges. The graph $G \odot H$ is obtained by taking one copy of graph G and n copies of graph H and making the ith vertex of graph G adjacent to every vertex of the ith copy of graph H, where $1 \leq i \leq n$. This study is focused on minimum dominating functions of corona product graph $K_n \odot P_m$.

HAMILTONIAN DECOMPOSITION OF COMPLETE FUZZY GRAPHSANDSOME RESULTS USING FUZZY MATRICES

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Abstract: In this paper we show that the Hamiltonian decomposition of complete fuzzygraphswith2nverticescanbedecomposedintotheintegervalueof$(2n–1)/2$Hamiltonian fuzzy cycles and the rest of the edges is n which forms the 1- factorization.And also we discuss about some results of complete fuzzy graphs and regular fuzzygraphsusing fuzzy matrices.
KeywordsFuzzygraph,Completefuzzygraph,Hamiltonianfuzzycycles,Regularfuzzygraph,Fuzzy matrices.

LEAST SQUARE APPROACH FOR FORECASTING PRODUCTION OF FOOD GRAINS IN KHARIF AND RABI-INDIA

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Abstract: The study creates attempts to analyze the production of food grains in Indian agriculture with its two prominent cropping seasons [Kharif (summer) and Rabi (winter)] for the period 1964-65 to 2020-21. Food grains are harvested in India in an area of 123.22 million hectares with a production of 251.57 million tonnes of grains. To study the behavior of the data, we have fitted linear, quadratic, Exponential and power curves for the production of food grains in the Kharif and the Rabi seasons and estimated R-square, MSE, RMSE, and MAPE for each model, and identified the best model among the four different models. We projected the production of food grains for the next decade. These results of the study reveal upward trends in the production of food grains, the growth trend for the production of total food grains in India is existing raise, compelling positive, and significant.

FIBONACCI PRIME GRACEFUL LABELING OF STAR RELATEDGRAPH

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Abstract. Graph labeling is a mapping from the vertices or edges or both to a set ofelements,oftenintegers.Asimplegraphonqedgesissaidtoadmitagracefullabelingifwe can label its vertices with distinct integers belongs to the set 0, 1, 2, ..., q such that eachedge is uniquely identified by the absolute difference between its end points. In this paperwefocusontheprimelabelingofverticesofthegraphwhichinducesaFibonaccigracefullabelin gontheedgesofthegraph.Morespecifically,wewillshowthatthedifferenttypesofstarrelatedgraphs areFibonacciprime gracefulgraphs.

Keywords: Primelabeling,gracefullabeling,star,Fibonacciprimegracefullabeling.

GLOBALSTABILITY,EXISTENCEANDUNIQUENESS SOLUTIONOFCORONAVIRUSDISEASEMODEL WITHCONTACTTRACINGANDQUARANTINE

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ABSTRACT: Inthispaper,theauthorsintroduceamodelforcovid-19withstabilityandequilibriumpoint.Inthecurrentscenario,covid-19outbreakistheworstoutbreakinallover the world.In modern history, covid-19 is one of unprecedented global crisis, even inmost of the advanced countries have been rendered inadequate to handle the situation.Itoriginates in the city of Wuhan(China) in the month of December 2019 and spreads likewildfiretoallovertheworld.Inordertocontrolthespreadorevencompletelyeradicatethedisease, wemadeamathematicalmodelbasedonthestandardSQIR model.Thedisease-freeequilibriumpointofthemodelwasestablishedanditsstabilityanalysiscarriedoutusingtheRouth -Hurwitzcriteria. Fromthestabilityanalysisitwasfoundoutthatthenecessaryandsufficientconditionforthecontrolor possiblytotaleradicationof the disease is that the product of total break-down of the susceptible and quarantinedclassesmustbelessthantheproductofthetotalremovalratesfromboththelatentandthein fectiousclasses.Wemaderecommendationsonwhatshouldbedoneinordertomeettheestablishedco ndition.

Keywords: Covid-19,MathematicalModel,Quarantine,Disease-freeequilibriumpoint,JacobianMatrix,Stabilityanalysis.

EXTENDINGNETWORKLIFETIMEBASEDONGAMETHEORYBYUSINGWIRELESSSENSORNETWORKS

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Abstract: Energy efficiency is the goal in directive to conserve linkage co-ordination istotally in use for the shortest also the longest revolution.So a lot of researchattentionsbasedonnetworklifetimemaximizationtechniqueshaveattractedaGameTheory concept.This syndicate technique of games in the networks, to determinethe organisation of the game theory, with fit-out and back felicitous, to boost itsgeneralization capabilities. The complete method is explained through the taxonomyof network rate, types and time. The theory produced by this method is significantlyameticulousthanstandardgametheory.Moreover,anextensivemodelmodificationstudyexpressionstobemuchsubordinatevarianceforgametheorythanforstandardgameasadirectcauseoftheimprovidence.ThispaperdescribesPowerEfficientLowLatency MAC protocol (PELLMAC) and S-MAC being regularly deployed nodes insensor networks. As well this paper to review the performance of the PELLMACprotocol and the S-MAC module for regular deployment, in order to increase thesleep sensor ratio and in such a way to reduce overall energy consumption therebyincreasesthenetworklifetime.

*Keywords:*WirelessSensorNetworks,Gametheory,NetworkData,NS2

ASTUDYOFQUOTIENTSTRUCTURESONBIPOLARFUZZYFINITESTATEMACHINES

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Abstract: In this exploration, we present the conception of Quotient structures of(BFFSMS) bipolar fuzzy finitestatemachines,eachassociationofaSG(semiGroup)andaBFFSM(bipolarfuzzyfinitestatemachine)by supposed congruence relations.We likewise characterize and portray the idea of a bipolar fuzzy ad-missiblerelation.

Keywords:
congruencerelation,bipolarfuzzyset,bipolarfuzzyadmissiblerelation,bipolarfuzzyfinitestatemachine.

HEATANDMASSTRANSFERINMHDFLOWOFSWCNTANDGRAPHENENANOPARTICLESSUSPENSIONINCASSONFLUID

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Abstract: The high aspect ratio and flexibility of carbon nanotubes (CNTs) and graphene nanoparticlesmakes them good choices for future of armoury production. The cost and maintenance of bullet-proof vests and other protective wears can be reduced by replacing the materials with CNTs andgraphenes. This study investigates heat and mass transport in the suspension of carbon nanotubesand graphene nanoparticles in Casson fluid in the presence of magnetic field. The governing equa-tions are reformulated using similarity variables into a dimensionless form.The dimensionlessequations are solved using the three-stage Lobatto IIIa finite difference approach.The study a78.41%reductionintheskinfrictionwhenresultsarecomparedwiththeCNT-waternanofluid.

Keywords: Hydromagnetic,MHD,SWCNTs,Graphene,Cassonfluid,Hybridnanofluid

INTEGRAL TRANSFORMS OF PSI-FUNCTION

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Abstract: Many of the transformations like Euler, Hankel, Sumudu and K-transforms plays a vital role in the field of engineering mathematics and has many applications. This paper refers to the study of Psi (Pragathi-Satyanarayana I-function) function of one variable. As a part of this study, we obtain different integral transforms of Pragathi-Satyanarayana I-function(Psi-Function) of one variable. Also some of the generalized transforms has been obtained as special cases. The integral transformations developed here are useful in real-world applications of mathematical science.

2010 AMS classification: 33C60, 33C99.
Keywords: Pragathi-Satyanarayana I-function; Hankel transform, Sumudu transform, K-transform and Euler transforms.

DOUBLE DIFFUSIVE MAGNETO CONVECTION INCHEMICALLY REACTIVE AND RADIATIVE FLUID FLOWTHROUGH A POROUS MEDIUM WITH HEATABSORPTION

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Abstract: Theaimofthispaperisto study thethermalradiation,heatabsorption viscous and Joule dissipation effects on convective heat and masstransfer flow of conducting fluid through a porous medium over a semi-infiniteinclined surface in the presence of thermal diffusion, first order chemicalreaction and uniform transverse magnetic field. Cartesian coordinate system ischosen so that the fluid flow is along the X-axis and Y-axis is normal to it. Thenon-dimensional governing equations of the flow model are solved analyticallyusing regular perturbation technique and obtained the expressions for velocity,temperature and concentration distributions. sink friction and rate of heat andmass transfer coefficients at the surface are calculated. The behaviour of flowand derived quantities for various material parameters has been studied andanalysed through graphs and tables in two cases viz, cooling of the plate (Gr>0)andheatingoftheplate(Gr<0).Fromtheresultsitis observedthatthermalboundarylayerthicknessdecreaseswithPrandtlnumberP_r,radiationparameterF and heat absorption parameter Q. concentration boundary layer thicknessincreaseswithsoretnumber$s_0$andit decreaseswithchemicalreactionparameterK_0.

Keywords: Magnetic Field, Heat and Mass Transfer, Thermal Radiation, Heatabsorption,PorousMedium.

INDIAN STUDENTS' AND PARENTS' PERSPECTIVES ON HIGHER EDUCATION OVERSEAS – TWIN CITIES

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Abstract: The majority of students choose to pursue higher education overseas in order to develop their global competences and obtain life experience**.**Overseas educational exchange is one way for students from all over the world to improve international awareness by living in a different culture or country. This study aided in determining parents' and students' attitudes on studying abroad, as well as the elements that influence them. A survey was conducted among Hyderabad and Secunderabad (Twin Cities) students studying in other countries. Online survey was conducted using a questionnaire with multiple choice questions based on a convenient sampling. The information gathered is analyzed using Chi-Square test, ANOVA One way Classification, t-test for difference of means and multiple regression analysis. The research hypothesis confirmed that there is a considerable variation in selection of region based on gender. It further said that the decision to choose an educational programme is based on the family income. Thus the perception of parents and students on higher education overseas is mostly influenced by region, University, Job, Emphasis on Application and E- learning. Therefore,this study examines not just the benefits of higher education overseas, but also how parents and students perceptions as well as income influence students' education.

Keywords: Higher Education in Overseas, Perception of Parents' and Students' on Higher Education Overseas, ANOVA, Multiple regression.

H-K- BIPOLAR FUZZY – BCK –IDEALS AND BIPOLAR ASSES FUZZY APPLIED ON SEMI GROUP

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Abstract: This paper initiate the uncertaintyh-k -BFBCK-Ids and uncertainty h-k-BFBCK-Imp-Ids with examples and properties are studied. In furthermore, analyzed about uncertainty h-k −Bipolar Fuzzy Union and Intersection set as its profuse algebraic aspects.

Keywords: Fuzzy Set (FS), Fuzzy BCK-ideal (FBCK-Id), H-K Fuzzy Subset (h-k-FSb), uncertainty h-k Bipolar fuzzy set (uncertainty h-k − BFS), uncertainty H-K -bipolar fuzzy Ideal (uncertainty -BFI), uncertainty H-K -bipolar fuzzy BCK-Ideal (uncertainty h-k BFBCK-Id) and uncertainty h− K bipolar fuzzy BCK-implied Ideal (uncertainty h-k-BFBCK-Imp-Id).

ICEMEA-36

AN EMPIRICAL STUDY ON HUMAN AND WILDLIFE CONFLICTS DUE TO POPULATION,DEFORESTATIONAND5G

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Abstract: Intherecentyears,ithasbeenobservedthattheconflictbetweenhumanandwildlifeisco ntinuouslygrowingwhichisabigreasontoworry.Thisismainlyduetogrowthinhumanpopulation. As there is an exponential growth in human population, we observe that there is alarge amount of deforestation, which means it's the human who is invading into wildlife.Deforestation can directly lead to biodiversity loss when animal species that live in the treesno longer have their habitat, cannot relocate, and therefore become extinct. Deforestation canlead certain tree species to permanently disappear, which affects biodiversity of plant speciesin an environment. With the advent of 5G, there is an even greater threat to resident andmigratorybirds.Theradiationfrom5Gmobilephonesmightbeharmfulforanimalsandbirdsto o;forexample,high-frequencyelectromagneticwavesaresaidtoalterinsects'bodytemperatures and impair their ability to orient themselves. This study aims at highlighting themajor contributing factors responsible for such conflicts and figuring out viable correctivemeasurestoalleviatethem.Basedonexperimentsandpracticalexperience,thisworkpro posesa statistical model to figure out the intensity and/or severity of such conflicts and identify therootcauseof this problem and try to overcome it.

Keywords:population,deforestation,5G,biodiversity

IMPACT OFUNIFORM AND NON-UNIFORM TEMPERATURE GRADIENTS ON THE ONSET OF RAYLEIGH BENARD CONVECTION IN A COMPOSITE SYSTEM FILLED WITH COUPLE STRESS FLUID

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Abstract: The impact of linear, parabolic, inverted parabolic, piecewise linear heated from below, piecewise linear cooled from above, and step-function temperature gradients on the onset of Rayleigh Benard convection in a composite system filled with a couple stress fluid is investigated. The composite system is comprised of two layers: a couple stress fluid saturated porous medium and couple stress fluid layer. The composite system is bounded by free-free, free-rigid, rigid-rigid, rigid-free, and adiabatic boundary conditions. The fluid and porous layers are governed by Navier Stokes and Darcy equations. The eigenvalue problem is solved using the Regular Perturbation technique and the graphs are plotted using MATHEMATICA to investigate the influence of Darcy number, couple stress parameter, thermal diffusivity ratio, and couple stress fluid viscosity ratio on the onset of convection.
Keywords: Couple stress fluid, Rayleigh-Benard Convection, Composite system, temperature gradients.

IMPACT OF LIFETIME ON LEARNING AND FORGETTING IN A SUPPLY CHAIN INVENTORY CONTROL MODEL WITH HYBRID TYPE DEMAND AND SERVICE LEVEL CONSTRAINT

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Abstract: This supply chain inventory model established for deteriorating items. In this paper we focused on decaying items. We supposed that deteriorating items have maximum lifetime and deterioration rate is constant. And uncertain lead is considering the impact of learning and forgetting about ordering cost. Constraint on the quality of service is inclusive. In this research we used selling price dependent hybrid type demand function. And whole study carried out under the effect of inflation. And we used preservation technology to preserve decaying items. Finally graphical representation and numerical solution solved by using software Mathematica 7.0.

Keywords: Inflation, learning-forgetting, Deteriorating Items, Hybrid demand

THERMAL DIFFUSION, HEAT SOURCE/SINK AND HALL CURRENT EFFECTSON MHD CONVECTIVE FLOW PAST AN INCLINED POROUS PLATE

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ABSTRACT: In this paper an attempt is made to study the chemical reaction and combined buoyancy effects of thermal and mass diffusion on MHD convective flow along an infinite vertical porous plate in the presence of Hall current with variable suction and Soret effect. A uniform magnetic field is applied in a direction normal to the porous plate. The equations governing the fluid flow are solved using the perturbation technique and the expressions for the velocity, the temperature and the concentration distributions have been obtained. Dimensionless velocity, temperature and concentration profiles are displayed graphically for different values of the parameters entering into the problem have been investigated. It has been observed that an increase in the Soret parameter leads to an increase in the primary and secondary velocities, and also an increase in the concentration. The primary and secondary velocities decrease with increase in the chemical reaction parameter and magnetic field parameter.

Keywords: Hall Effect, Porous medium, chemical reaction, Heat generation/absorption, Soret effect.

THERMAL AND MASS DIFFUSION EFFECTS ON CONVECTIVE FLOW PAST A VERTICAL POROUS PLATE

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Abstract: This paper is contributed for the study of MHD Convective Flow Past A Vertical Porous Plate Under the Influence of Thermal and Mass Diffusion over a vertical porous plate. The contributions have physically explained and presented graphically. It is noticed that, as the Prandtl number increases the velocity decreases. Further it is seen that near the boundary layer a backward flow is noticed however, the fluid motion in the forward direction has been noticed thereafter. Further, it is seen that, as the Prandtl number is inversely related to velocity. In addition to the above, it is observed that, as the Grashoff number increases, the fluid velocity also increases. Further, as the pore size increases the velocity also increases. In this case more of backward flow is noticed and there after the fluid velocity is dominating as a result of which forward motion is observed. Further, the Prandtl number has the significant contribution over the flow rate.

DUFOUR AND RADIATIONABSORPTION EFFECTS ON MHD CASSON FLUID FLOW PAST AN INCLINED PLATE IN CONDUCTING FIELD

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ABSTRACT: This article studies radiation absorption effect on the unsteady magneto-hydrodynamic mixed convection flow over an inclined permeable moving plate with the presence of thermal radiation, heat absorption and homogenous chemical reaction, subjected to variable suction is investigated. The problem is formulated in terms of non-similar equations. The governing dimensionless equations of the flow are transformed into a system of nonlinear ordinary differential equations by using perturbation technique. and analytical expressions for Velocity, Temperature and Concentration are obtained. The expressions for Velocity, Temperature and Concentration are obtained. Also, the expressions for physical quantities such as Skin friction, Nusselt number and Sherwood number are derived. The effects of all the parameters involved in the problem are reported with the help of graphs and tables. The problem is limited to slow velocity flow of chemically reacting fluids in porous media. Future research may consider inertia effects of porous media for relatively higher velocity flows. A very useful source of information for researchers on the subject of radiation absorption effects in porous media.

Keywords: Radiation absorption, Casson fluid, MHD, Heat absorption, Chemical reaction, Dufour effect, inclined plate.

A NEW KIND OF CRYPTOSYSTEM USING POLYNOMIALS AND FIBONACCI NUMBERS

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Abstract: In this paper, a new kind of cryptosystem is proposed by taking some properties of polynomials into consideration. Polynomials are play prominent position in number theory and cryptography. Polynomials also play a vital role in exchange of messages. Novelty of cryptosystem establishment is based on the polynomials which are constructed by the choice of integers p, q (not necessarily primes) such that (p, q) =1. Public and Private keys are constructed based on this polynomial and by annihilating the properties of Fibonacci sequences, senders send the messages to the receiver. Polynomials are used in the first level of encrypting the plain text and Fibonacci numbers / sequences are used as the second level of encryption as a part of super encryption technique.

Keywords: Cryptography, Polynomials, Fibonacci numbers.

BIPOLAR FUZZY PLANAR GRAPH AND THEIR APPLICATIONS

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ABSTRACT: The object of this paper is to introduce domination in bipolar fuzzy planar graph. In this paper we discussed the prominence of Bipolar fuzzy planar graph. Bipolar fuzzy planar graph is an important subclass of fuzzy graph. We define bipolar fuzzy planar graph in such a way that the crossing of edges is allowed. Also, we define the bipolar fuzzy planarity value which measures the amount of planarity of a bipolar fuzzy planar graph. Bipolar fuzzy planar graph has many applications in different fields including design of social network, design of gas or oil pipelines, planning of road constructions etc.

Keywords: Bipolar fuzzy graph, Planar fuzzy graph, Domination in bipolar fuzzy planar graph.

CHEMICALREACTIONANDRADIATIONEFFECTSONELECTRICALMHDFLOWOFANANOFLUIDOVERASTRETCHING SHEET

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Abstract: In the presence of radiation and chemical response impacts, an analysis was conducted tostudy the electrical magnetohydrodynamics (EMHD) flow of a nanofluid to nonlinear stretchedsurface.Withtheelectricalfieldandvariablethicknesswonder,thefeaturesofheattransfer movement are examined. The presentation deal with a nanofluid flow over a nonlinearly stretchingsheet with a variable thickness on EMHD in the presence of thermal radiation, viscous dissipationand Joule heating incorporating, Brownian motion, chemical reaction and thermophoresis in themodel. The governing equations are transformed using a set of dimensionless variables and thensolved numerically using Runge-Kutta method along with shooting technique. Numerical solutionsarethenobtainedandinvestigatedindetailfordifferentinterestingparameterssuchas thelocalskin-friction,NusseltnumberandSherwoodnumberaswellasotherparametervaluessuchasthevelocity, temperatureandconcentrationprofiles arepresentedgraphicallyanddiscussedqualitatively.

A STUDY OF NEWTONIAN FLUID FLOW OVER THINNER AXISYMMETRIC SURFACE USING BVP4C TECHNIQUE

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ABSTRACT: Axisymmetric concerns may be found in a wide variety of various industries and can takes a shape of round toroids, cones, cylinders, domes, and other shapes as well. When it comes to actual applications, they are represented by aerosol cans, submarine pressure hulls, cooling towers, offshore drilling rigs, radomes, nuclear reactors, and other similar objects. The goal of this research is to improve the performance a heat source. Using similarity transformations, the structure of nonlinear differential equations is transformed into dimensionless ODEs. BVP4C is used to decrypt the findings. The influences of physical entities on velocity and temperature are drawn and briefly described. Believe that the design of this item has an impact on the thermal properties and fluid velocity of the surrounding environment. The originality/novelty of the actual work is to examine the viscous convective flow flowing through a bullet-shaped item.

KEY WORDS: Bvp4c; MHD; Heat Source, Bullet shaped.

MONOPHONICPEBBLINGNUMBER OF SOMENETWORKRELATEDGRAPHS

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Abstract: Assume$G$isagraphwithsomepebblesdistributedoveritsvertices.Apebblingmoveis whentwopebblesareremovedfromonevertex,oneisthrownaway, and the other is moved to an adjacent vertex.The monophonic pebblingnumber, $\mu(G)$, of a connected graph G, is the least positive integer n such that anydistributionof$n$pebbleson$G$allowsonepebbletobecarriedtoanyspecifiedbutarbitraryvert exusingmonophonicpathbyasequenceofpebblingoperations.Wediscussthemonophonicpeb blingnumberofsomenetworkrelatedgraphs.

Keywords and Phrases: Keywords:monophonic pebbling number, monophonicdistance,cyclerelatednetworks

2020MathematicsSubjectClassification:05C12,05C25,05C38,05C76.

NETWORK LIFE-TIME AREAS BASED ON GAME THEORY USING WIRELESS SENSOR NETWORKS

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Abstract: Energy efficiency is the goal in directive to conserve linkage co-ordination is totally in use for the shortest also the longest revolution. So a lot of research attentions based on network lifetime maximization techniques have attracted a Game Theory concept. This syndicate technique of games in nodes establishes the architecture of game theory, using fit-out & back fortuitous, to improve its generalisation capabilities. The whole method is explained to use a networking speed, class, and period classification. This process yields a much more careful model than standard behavioural economics. Moreover, an extensive model adaptation study finds that behavioural economics has much lower subordinated variability than standard games as a causative factor of arrogant disregard. This paper describes Power Efficient Low Latency MAC protocol (PELLMAC) and S-MAC being regularly deployed nodes in sensor networks. As well this paper reviews the performance of the PELLMAC protocol and the S-MAC module for regular deployment, in order to increase the sleep sensor ratio and in such a way as to reduce overall energy consumption thereby increases the network lifetime.

Key words: Wireless Sensor Networks, Game theory, Network Data, NS2.

ON THE INSTABILITY REGION FOR THE TAYLOR GOLDSTEIN PROBLEM IN β PLANE

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Abstract: We consider Taylor – Goldstein problem in β - plane under Boussineq approximation, which deals with incompressible, inviscid stratified shear flows. In this paper we obtained parabolic instability region which intersects the semi ellipse under certain condition and it has been illustrated with examples. The examples shows that as wave number increases the region of Richardson number also increases. Also we derived the upper bound for the growth rate of anunstable mode.

Keyword: zonal flows, shear flows, incompressible fluids.
AMS subject classification: 76E05

ANALYSIS ON OTT PLATFORMS AND THEIR AFFECTS ON THE POPULATION IN THE TWIN CITIES OF HYDERABAD AND SECUNDERABAD

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Abstract:TT (Over-The-Top) media is a service offered to the viewers directly via the internet. In the last few years, India has seen an OTT revolution, with many platforms emerging and affecting the viewer's lifestyle, Happiness Level, Social and Personal Relations. **Design:** A survey was conducted for all age groups, data collected through social media. **Methods and Material:** Online survey was conducted (n=192) using a questionnaire with multiple-choice questions. **Statistical Analysis Used:** Chi-Square test, ANOVA Classification, and t-test for difference of means were used. **Result:** The study helped identify the preference of OTT over Tv and soap operas, the reasons for its spike, audience's most preferred OTT, OTT's impacts on physical and mental health and its effects on bonding and relationships with peers and family members. **Novelty:** The study not just focuses on the working and comparison of the platforms but also analyzes the physical, social and other impacts on OTT on viewers.
Keywords: OTT, platforms, lifestyle, Covid19

UNSTEADY FLOW OF TANGENT HYPERBOLIC LIQUID PAST A VERTICAL POROUS PLATE IN THE PRSENCE OF THERMAL RADIATION AND SORET EFFECTS

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Abstract: The analysis in this communication addresses the unsteady MHD flow of tangent hyperbolic liquid through a vertical plate. The model on mass and heat transport is set up with Joule heating, heat generation, viscous dissipation, thermal radiation, chemical reaction and Soret-Dufour in the the form of partial differential equations (PDEs). The PDEs are simplified into a dimensionless PDEs by utilizing a suitable quantities. The simplified equations are solved by utilizing the spectral relaxation method (SRM). The outcomes shows that increase in the Weissenberg and the magnetic field degenerates the velocity profile. The thermal radiation is found to elevate the velocity and temperature profiles as its values increases. The impact of Soret and Dufour on the flow is found to alternate each other. The computational outcomes for concentration, temperature and velocity are illustrated graphically for all encountered flow parameters. The present outcomes are compared with previous outcomes and are found to correlate.

Keywords: Joule heating, Non-Newtonian liquid, Spectral relaxation method

MODELING OF INSURANCE DATA THROUGH APPROPRIATE STATISTICAL DISTRIBUTIONS

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ABSTRACT: An emergent research view holds that financial markets are both uncertain and predictable. Also, markets can be efficient but also uncertain. Insurance companies typically face two major problems when they want to forecast future premiums paid by using past or present behavior of premiums paid. For this, one has to find an appropriate statistical Probability distribution for the premiums paid. Then after test how well this statistical distribution fits the claims data. In modeling insurance claims, when there are extreme observations in the data, the commonly used loss distributions often are able to fit the bulk of the data well but fail to do so at the tail. One approach to overcome this problem is to focus on the extreme observations only and model them with the generalized Pareto distribution, supported by extreme value theory. The objective of this paper is to obtain an appropriate statistical Probability distribution for the insurance premium amounts and to test how well the chosen statistical distribution fits the premiums data. The modeling process will ascertain a statistical distribution that could capable model the claim amounts, and then the goodness of fit test was done mathematically using graphically using the Probability-Probability Plots (P-P plots) and Quantile-Quantile Plots(Q-Q plots). Finally, the study gives a summary, conclusion and recommendations that can be used by insurance companies to improve their results concerning future premium inferences.

Key words: premiums, extreme value theory, generalized Pareto distribution,generalized extreme value distribution, P-P plot, Q-Q Plot.

SOLUTION OF A NONLINEAR DIFFERENTIAL EQUATION BY HOMOTOPY PERTURBATION METHOD

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Abstract: Homotopy perturbation method (HPM) is one of analytic approximation method suitable for solving nonlinear differential equations used by the most of the researchers. It gives a series solution by transferring the nonlinear problem into a number of linear sub-problems. In order to study the competence of HPM, a truly nonlinear oscillator differential equation is considered for obtaining periodic solution. Phase plane diagrams are created from estimated result and it is weigh against with real phase diagram.

Keywords: Phase plane; Equation of motion; Frequency parameter; Homotopy perturbation method (HPM); Harmonic balance method; Modified Differential transform method (MDTM),Harmonic Balance method (HBM)

PRODUCTOFSEMI–LATTICES OFCERTAINGRAPHS

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ABSTRACT: In this article, author tries to construct a relation between graphs of product ofmeet-semilattices L = L_1XL_2, where $L_1$and $L_2$are two semilattices and obtainsome properties of such graphs. Author investigated that for meet-semilattices $L_1$and L_2has a cycle of length n-1 and n. Further author reveals that if$L_1$and L_2betwo meet-semilattices with 0 and L = L_1XL_2, then it is a star graph. In this paper,we have covered some definitions, examples and theorems on zero devisor graphedgeof a 4-cycles ora 5-cycles.Γ(L)isa star graph.
Keywords: Lattices,meetsemilattice,star graph.
2010MathematicsSubjectClassification: Primary05C50, Secondary05C31

ENTROPY GENERATION IN NON-NEWTONIAN FLUID FLOW PAST A STRETCHING SURFACE

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Abstract: Entropy generation in a Casson fluid flow past a stretching sheet is examined by this paper. In thermodynamic process, entropy generation is a degree of irreversibility factors. In heat transfer studies, it is a common feature. By using the RKF method, we solve the transformed equations. The impact of some other physical parameters like the Casson, velocity, and temperature parameters are considered by the study. The results of this study show that the velocity parameter significantly affects the fluid flow and temperature profiles. Also, when the Casson parameter increases, the temperature profiles increase, whereas there is a reduction in the velocity profile.
Keywords: Casson fluid; Entropy generation; Stretching plate

REVIEW ON ARISING TRENDS IN DISCOVERY OF PLANT CONDITIONS USING IMAGE PROCESSING WITH MACHINE LEARNING REVIEW

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Abstract: In India, about 70 of the population are involved in husbandry and husbandry. Moment factory conditions are significant concern as it reduces the product and quality of husbandry yield. Utmost factory conditions are caused by bacteria, fungi and contagion. Homemade discovery and identification of splint complaint involve further man power and precious in large ranch. Discovery of complaint and healthy monitoring of factory are major challenges for sustainable husbandry. Hence there's need to descry factory complaint automatically using image processing fashion at an early stage with further delicacy. It involves image accession, image pre-processing, image segmentation, point birth and bracket of complaint. To increase the quality of yield and yield, a regular monitoring fashion for discovery of conditions in shops becomes essential. The digital image processing system is one similar important fashion to diagnose the delicate symptoms much before than the mortal eye could fete. It enables the growers to take applicable conduct timely in order to guard the crop and get the asked quality and yield of husbandry yield. Different ways used for the bracket of factory complaint using colorful classifiers similar as Support Vector Machine, Artificial Neural Network, K-Nearest Neighbors and other classifier styles have been bandied. The purpose of this paper is to give an overview of established styles for factory complaint discovery, bracket systems.

Keywords: Image Processing, Disease Detection,   Segmentation, Point Birth, Bracket

EFFECT OF RADIATION ON MAGNETO HYDRODYNAMICS FLOW OF JEFFREYS FLUID OVER AN INFINITE VERTICAL PLATE

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ABSTRACT: We have discussed unsteady MHD rotating flow of an electrically conducting, viscous, incompressible and optically thick radiating Jeffrey's fluid past an impulsively vertical moving porous plate while temperature of the plate has a temporarily ramped profile. Analytical solutions of the governing equations are obtained by Laplace transform technique. The precise solution is also obtained in case of unit Schmidt number. The analytical phrases for skin friction and Nusselt number are derived for both ramped temperature and isothermal plates. Sherwood number is also obtained. The velocity, temperature and concentration are displayed graphically whereas skin friction, Nusselt number and Sherwood number are presented in tabular form.

Keywords: MHD flows, porous medium, convection flows, vertical plate, ramped temperature, isothermal plate

IMPACT OF ENTROPY GENERATION IN OBLIQUE NANO FLUID FLOW PAST A STRETCHING SHEET

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Abstract: In the present communication, an analysis is carried out for the entropy generation in an oblique nano-fluid impinging over a stretching sheet. Extensive research has been carried out in the area of convective heat transfer using nano particles in fluids. The stretching/shrinking velocity and the ambient fluid velocity are assumed to vary linearly with the distance from the stagnation point. In the present article we have incorporated a novel RKF technique to understand the change in heat transfer and thermal properties of a nanofluid. Further the effect of change in angle of the impinging fluid is also studied. We have analysed and presented graphically the temperature and concentration profiles as well as the skin friction coefficient, Nusselt number are discussed.

SPEED CONTROL OF A VEHICLE USINGTRIANGULARFUZZYMEMBERSHIPFUNCTION

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ABSTRACT: Nowadays, Artificial Intelligence-based self-driving cars are on a roll. So, generally, a question arises:"Howsafearethey?"“Aretheysaferthanhuman-driven?”Especiallyduringrushhourandhightrafficscenarios. The same query can also be raised on how efficient their braking systems are. This papertries to deal with that. Through this paper, we present the design of an automated vehicle brakingsystem. The automated braking system is based onthe Fuzzy Triangular Membership Function.Previously work has been done with Fuzzy Logic rule-based Kalman Filter and Fuzzy Logic Controller.WehavetakentheapproachthroughtheFuzzyTriangularMembershipFunction.Triangularfunctionscan be useful in lots of ways. Triangular Functions can act as extra hands and feet for our steeringwheel, accelerator, clutch, and break. The Triangular membership function can be defined based onthree parameters. It helps to fuzzify the input. Speed difference and acceleration are considered asinput and throttle is considered as output. The model is governed by some set rules. The work hasbeenpartiallyimplementedthroughPYTHON.Asweknow,accelerationchangesspeed.So,our modelisbasedonthespeeddifferenceduetoacceleration.Weareusingaspeedometerandacceleromerterto detect instantaneous speed and acceleration respectively. The respectivespeed difference iscalculated for respective acceleration and it is used to find out the amount of throttle and brakeneededtostopthevehicle.

Keywords-
Artificialintelligence;Automatedvehicle;Fuzzytriangularmembershipfunction;PYTHON;Speeddifference;Acceleration**.**

SQUEEZE FILM LUBRICATION OF ASYMMETRIC ROLLERSUSING ROELANDS VISCOSITY-PRESSURE-TEMPERATURERELATIONSHIPWITH CONVECTION

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ABSTRACT: The hydrodynamic lubrication characteristics of asymmetric rollers withnon-Newtonian incompressible Bingham plastic fluid under normal squeezingmotion with cavitation are investigated under the behavior of line contact. Here,the system is considered in such a way that lower surface is moving with highvelocitythanuppersurfaceandthefluidviscosityisassumedtofollowRoelandsmodel which is function of pressure and mean film temperature. The equationswhich governs the fluid flow such as equation of motion along with continuityand thermal energy equations are solved first analytically and then investigatednumerically using MATLAB. Some important characteristics of bearing likevelocity, pressure, mean temperature, viscosity, load and traction are analyzedthrough graphs and tables and the result are in good comparison with Newtonianand non-Newtonianfluid.

Keywords:Hydrodynamiclubrication,Non-Newtonian,Binghamplastic,Viscosity,Thermaleffects,Incompressible.

EFFECTS OF CHEMICAL REACTION ON SISCO NANOFLUID OVER A WEDGETHROUGH PERMEABLE MEDIA

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Abstract: In the present article, effects of chemical reaction on sisco nanofluid over a wedgethrough Permeable media. Permeability and Chemical reaction are also taken into account. The dimensionless ordinary differential equations are produced by applying sufficient similarity variables to the governing partial differential equations. In order to solve the transformed system of PDEs using MATLAB software, RK-Fehlberg with shooting method is used. Impacts of thermophoresis, Brownian motion, Magnetic field, radiation, heat source parameter, the profiles of velocity, temperature, nanoparticle concentration are explored in the graphs. Numerical results for the effects of different pertinent parameters on local skin friction coefficient, local Nusselt number and Sherwood number were tabulated.

.VAGUE BI-QUASI-INTERIOR IDEALS OF A Γ-SEMIRING

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Abstract: In this paper, we introduce and study the concept of vague bi-quasi-interior ideal of a Γ-semiring as a generalization of vague bi-ideal, vague quasi-ideal & vague interior ideal of a Γ-semiring and study the properties of vague bi-quasi-interior ideals of a Γ-semiring.
Mathematics Subject Classification: 16Y60, 03G25.
Key Words: Γ-semiring, regular Γ-semiring, bi-quasi-interior ideal, vague Γ-semiring, vague bi-quasi-interior ideal

GIMEL-FUNCTION OF SEVERAL VARIABLES AND ITS APPLICATION

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Abstract: Many of the special functions has applications in mathematical physics. One of the generalizations of H-function is the Gimel-function is also having many applications in solving the partial differential equations. The object of this articles is to obtain an application of product of certain class of polynomials and Gimel-function of many variables. Also obtaining a solution to the differential equation arises in the oscillations of water in a circular pond. At the end of the paper we discuss some of the particular cases.

2010 AMS classification: 33C45, 33C60, 26D20.
Keywords: Gimel-function, H-function, General classes of polynomials, Oscillations of water.

IMPACT OF CHEMICAL REACTION ON MHD FLOW OF A MICROPOLAR NANOFLUID OVER A SHRINKING SHEET WITH HEAT SOURCE

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Abstract: This article examines the behaviour of a free convective micropolar nano fluid over a heating, contracting sheet in the presence of a transverse magnetic field. In addition, we factor in the results of any chemical reactions that may occur. To find a solution, we use a technique called similarity transformation. Non-linear ordinary differential equations are derived from a system of connected non-linear partial differential equations expressing momentum and concentration and a non-homogeneous heat equation. The Runge-Kutta method is used, and then the shooting approach is used, to solve the altered equations. This article presents and discusses the impact of the newly developing parameters that characterise the flow. It is discovered that the boundary layer is reduced due to the heat source's influence on the velocity profile. As the value of the material parameter is raised, so does the profile of the angular velocity. The results of the present investigation agreed very well with those of previous research.

Keywords: Chemical reaction; MHD; Micropolar; Nano fluid; Shrinking sheet; Heat source.

SUPERFLUOUS ELEMENT IN A LATTICE AND SOME PROPERTIES

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Abstract: We consider superfluous elements in a bounded lattice L with 0 and 1. We define the notions of superfluous element graph, weak supplement element graph, in a distributive lattice. Dual atoms play an important role to find connection between the graph-theoretic properties and lattice-theoretic properties. Consequently, we derive equivalent conditions of graphs connecting the cardinality of dual atoms in a lattice. We prove some properties such as diameter, girth and cut vertex of these graphs.

2010 Mathematics Subject Classification: 05C69, 06B99
Keywords: Lattice; superfluous element; weak supplement element

SOME CLASSES OF ANTI-MAGIC LABELING OF $C_4 \odot K_2$

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Abstract: HartsfieldandRingelprovedthatallcyclesandcompletegraphsareanti-magic. In this manuscript we mainly listening carefully on the main effect that for $n \geq 3$, the corona produce of cycles C_n with K_2 and corona product of complete graphs K_n with K_2 areanti-magic. In this way, it is natural to askwhetherforwhatclassesofgraphs$C$,itscoronaproductwithK_2admitanti-magic. Is it essential that a graph G is anti-magic, to admit the anti-magicness of G$\odot K_2$in thispointofview,weprovidedtheresulttosupporttheconjecturethateveryconnected graph other than $K_2$is anti-magic.

Keywords: Lexicographic product, Strong product, corona product, Harmonious Labeling of CoronaGraphs.

ANALYSIS OF ENERGY AND MASS TRANSPORT IN FREE CONVECTION FLOW OF $C_2H_6O_2$ BASED NANOFLUID OVER AN INFINITE POROUS PLATE

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Abstract: In this paper the effects of Diffusion thermo, radiation absorption and chemical reaction on MHD free convective heat and mass transfer flow of a nanofluid bounded by a semi-infinite flat plate are analyzed. The plate is moved with a constant velocity U_0, temperature and the concentration are assumed to be fluctuating with time harmonically from a constant mean at the plate. The analytical solutions of the boundary layer equations are assumed of oscillatory type and are solved by using the perturbation technique. Three types of nanofluids namely Cu-$C_2H_6O_2$, CuO- $C_2H_6O_2$ and TiO2-$C_2H_6O_2$ nano fluids are used. The effects of various fluid flow parameters are discussed through graphs and tables. It is observed that the diffusion thermo parameter and radiation absorption parameter enhance the velocity, temperature and skin friction. For the engineering industry, the skin friction coefficient examined numerically in detail. This enhancement is very significant for copper nanoparticles. This is due to the high conductivity of the solid particles of Cu,CuO than those of TiO2. Also it is noticed that the solutal boundary layer thickness decreases with an increase in chemical reaction parameter. It is because chemical molecular diffusivity reduces for higher values of Kr.

Key Words: MHD, Radiation absorbtion, Dufour effect, Porous medium, Chemical reaction

ICEMEA-67
NEUTROSOPHIC L FUZZY IDEALS OF RING

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Abstract: Neutrosophic fuzzy set is an extension of Intuionistic fuzzy set which includes indeterminacy membership value. Generally NF set can be generalized by three values namely truth value(T),indeterminacy value(I) and falsity value(F). In this paper, we present the Neutrosophic L fuzzy ideals in rings. Further we verify the algebraic properties like union, intersection and Cartesian product of the neutrosophic L fuzzy ideals of ring.

Key words: Fuzzy set, Ring, L fuzzy ideals, Neutrosophic fuzzy set.

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DOMINATION IN IRREGULAR BIPOLAR ANTI FUZZY GRAPHS

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Abstract: In this paper size, order and degree of a Bipolar anti fuzzy graph, uninodal anti-fuzzy graph is defined with suitable and adequate examples. The properties of bipolar anti fuzzy graph are discussed. We introduced the concept of domination on irregular bipolar anti fuzzy graph and its various classifications. Some properties of irregular bipolar anti fuzzy graphs are studied. We derived some theorems related to this concept.

Keywords: Anti fuzzy graph, Bipolar fuzzy graph, Domination in anti-fuzzy graph, Irregular domination in anti-fuzzy graphs.