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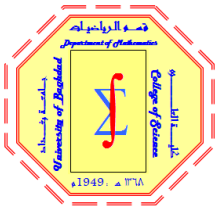

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Suggested method of Estimation for the Two Parameters of Weibull Distribution Using Simulation Technique

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ABSTRACT

In this paper, suggested method as well as the conventional methods (probability plot-(p.p.) for estimations of the two-parameters (shape and scale) of the Weibull distribution had proposed and the estimators had been implemented for different sample sizes small, medium, and large of size 20, 50, and 100 respectively by simulation technique. The comparisons were carried out between different methods and sample sizes. It was observed from the results that suggested method which were performed for the first time (as far as we know), by using MSE indicator, the comparisons between the studied and suggested methods can be summarized through extremely asymptotic for indicator (MSE) results by generating random errors with $W(1,1)$ and with generating with $N(0,\sigma^2)$ at the first contrast$(1,1)$, and the suggested method were reported better performance through the sequentially status of ascending ordered for assumed initial contrast parameters, specially with generating of random error with $W(1,1)$ cooperation with generating of $N(0,\delta)$ in the simple linear regression equation.

Keywords: Generalized Exponential, ECDF and Inverse Prob. of cum. sampling dist.

Generalized Derivable Maps of Prime Rings

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ABSTRACT

Let R be a unital prime ring containing a nontrivial idempotent element and D be a derivable map of R. We show that a mapping $G : R \to R$ satisfying

$$G(xy) = G(x)y + xD(y)$$

for all $x, y \in R$ must be additive.

Differential Subordination and Superordination results for multivalent functions associated with certain linear operator

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ABSTRACT

In this investigation we define a differential linear operator D^n, then applying it on functions in the class $A(p)$ of p-valent functions to obtain some results on subordination and superordination preserving properties of this class of multivalent functions in the open unit disc. Also we obtain some sandwich results on functions in this class.

AMS Mathematics Subject Classification: 30C45
Keywords: Analytic functions, Univalent functions, Multivalent functions, Starlike functions, Convex functions, Subordination
and Superordination, Differential linear operator.

Numerical Solution of Heat Equation

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ABSTRACT

Many authors solved heat equation using five points and eleven points in irregular domain [1],[3],[4]. In [3] he derived the formula using nine points, so we have to apply this formula to the heat equation in two dimensions. We got good results in comparing with analytic solution.

On q-Szasa–Mirakyan operators of functions of two variables

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ABSTRACT

In this paper, we define two operators of summation and summation-integral of q-type in two dimensional spaces. Firstly, we study the convergence of these operators and then we prove Voronovskaya-type asymptotic formulas for these operators.

AMS Mathematics Subject Classification: 41A36, 41A25.
Keywords: q-Szasz Mirakjan operators, linear positive operators, Korovkin theorem, Voronvskaja-type asymptotic formula.

The Singularity of Bipartite Graph

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ABSTRACT

A graph G is said to be singular if and only if its adjacency matrix is singular. A graph $G = (V, E)$ is said to be bipartite graph if and only if we can write its vertex set as $V(G) = V_1 \cup V_2$, and each edge has exactly one end point in V_1 and other end point in V_2. In this work, we will use graphic permutation to find the determinant of adjacency matrix of bipartite graph. After that, we will determine the conditions that the bipartite graph is singular or non-singular.

Fuzzy soft modules over Fuzzy soft rings

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ABSTRACT

Let M be an R- module, and let $A \neq \phi$ be a set, let (F, A) be a soft set over M. Then (F, A) is said to be a fuzzy soft module over M iff $\forall a \in A$, $F(a)$ is a fuzzy submodule of M. In this paper, we introduce the concept of fuzzy soft modules over fuzzy soft rings and some of its properties and we define the concepts of quotient module, product and coproduct operations in the category of $FSFS$ modules.

On Totall *-Paranormal Operators

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ABSTRACT

In this paper we show that a totally *-paranomal operator on a real Hilbert space, is

1. Hypercyclic operator,
2. Supercyclic operator.

This is accomplished by showing that the adjoint of totally *-paranormal operator on a real Hilbert space has Bishop's property (β). Also, we proved that the adjoint of totally *- paranormal operator on a complex Hilbert space countably hypercyclic with additional conditions.

On D-Compact Topological Groups

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ABSTRACT

In the present paper, we have introduced some new definitions on D-compact topological group and D-L compact topological group for the compactification in topological spaces and groups, we obtain some results related to D-compact topological group and D-L compact topological group.

Keywords: Groups, Cyclic group, Topological group, D-cover topological group, isomorphism, direct product, D-compact topological group.

The normality of composition operator $\mathrm{C}_{\alpha_{\mathrm{p_n}}}\mathrm{C}_{\alpha_{\mathrm{p_{n-1}}}}\ldots\mathrm{C}_{\alpha_{\mathrm{p_1}}}$ on Hardy space $\mathbb{H}$

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ABSTRACT

In this paper we study the composition operator $\mathrm{C}_{\alpha_{\mathrm{p_n}}}\mathrm{C}_{\alpha_{\mathrm{p_{n-1}}}}\ldots\mathrm{C}_{\alpha_{\mathrm{p_1}}}$ on Hardy space $\mathbb{H}$ induced by $\alpha_{p_1}\circ\alpha_{p_2}\circ\cdots\circ\alpha_{p_n}$ such that each of $\alpha_{p_1},\alpha_{p_2},\ldots,\alpha_{p_n}$ is a special automorphism of the unit disk $\mathbb{U}$, where $p_1,p_2,\ldots,p_n\in\mathbb{U}$. We study the normality of $\mathrm{C}_{\alpha_{\mathrm{p_n}}}\mathrm{C}_{\alpha_{\mathrm{p_{n-1}}}}\ldots\mathrm{C}_{\alpha_{\mathrm{p_1}}}$ and gave some other partial results.

New Characterization of Topological Transitive

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ABSTRACT

Let (X, f) be a dynamical system, (X, f) is said to be topological transitive if for every pair of non-empty open set U, V , there exists $n \geq 0$ such that $f^n(U) \cap V \neq \phi$. We introduce and investigate a new definition of topological transitive by using the nation N-open subset and we called N-transitive and prove the equivalent definitions of this new definition.

AMS Mathematics Subject Classification: 54H20
Keywords: Topological transitive, N-open Subset.

Parameters estimation for modified weibull distribution based on singly type one censored samples

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ABSTRACT

The three parameters distribution called modified weibull distribution (MWD) introduced by sarhan and zaindin (2009)[1]. In this paper, we deal with interval estimation to estimate the parameters of modified weibull distribution based on singly type one censored data, using maximum likelihood method and fisher information to obtain the estimate parameters for modified weibull distribution, then estimate the death function, survival function and hazard function obtained these estimate functions by applied on set of real data.

Application of Fuzzy-Parametric Linear Programming Problem

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ABSTRACT

In this paper, we have created a link between the fuzzy linear programming and parametric linear programming by a new procedure for solving fuzzy-parametric linear programming problems, where the matrix coefficients are uncertain value $(\tilde{a_{ij}})$ and the changes in the coefficients of objective function (c_j). then find parametric functions for the optimal basis and alternative basis. The value of critical points which determine the beginning of the alternative basis will be approximations to the value of the critical point that determine the ends of the optimal basis. We use the ready program Win(QSB) with real data in formulation that helps to improve the computational performance.

In this study, practical application of the general company for electrical industries, development of certain products for the purpose of competition and increase profits. In this case the labour environment become fuzzy, then we used fuzzy linear programming from other hand the company expects wide occur change in the prices of raw materials, then we use parametric linear programming.

Keywords: Fuzzy linear programming, parametric linear programming, fuzzy decisive set method, fuzzy-parametric linear programming.

Fuzzy Linear Discriminant Analysis Clustering with Its Application

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ABSTRACT

Many fuzzy clustering are based on within -cluster scatter with a compactness measure, but in this paper explaining new fuzzy clustering method which depend on within-cluster scatter with a compactness measure and between-cluster scatter with a separation measure called the fuzzy compactness and separation (FCS). The fuzzy linear discriminant analysis (FLDA) based on within-cluster scatter matrix and between- cluster scatter matrix. Then two fuzzy scattering matrices in the objective function assure the compactness between data elements and cluster centers. To test the optimal number of clusters using validation clustering method is discuss. After that an illustrate example are applied.

Keywords: Clustering, fuzzy compactness and separation (FCS), fuzzy linear discriminant analysis (FLDA), validation clustering method.

Coregular Modules

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ABSTRACT

In this paper we study the concepts of copure submodules and coregular modules. Many results related with these concepts are obtained.

Keywords: Pure submodule, copure submodule, regular module, coregular module, multiplication module, strongly comultiplication module, completely distributive module.

Rational valued characters table of the Group $Q_{2m}C_4$ where m odd number such that $m = p^{\alpha_1}p^{\alpha_2}\dots p^{\alpha_r}$ where $p^{\alpha_1}, p^{\alpha_2}, \dots, p^{\alpha_r}$ are distinct primes and $\alpha_1, \alpha_2, \dots, \alpha_r$ are positive integers

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ABSTRACT

In this paper, we have found that the rational valued characters table of the group $Q_{2m}C_4$ when m is an odd number, we are prove that:

$$\equiv^* (Q_{2m} \times C_4) = \equiv^* (Q_{2m}) \otimes \equiv^* (C4)$$

Mathematical Model For Determination the Increase in Operational Cost of Transmission Line From HAD3 to QIM3 in Electric Power System

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ABSTRACT

The transformation of a physical system to mathematical base is very important due to analysis of the systems behavior. In this paper an electric power system is considered, we design mathematical model for the determination of the increase in operational cost of transmission line from Haditha Dam substation to Qa'im substation . We derived relations which the approximate distance for VARS transmission must satisfy with considering minimum losses in the system. MATLAB computer programming is used to obtain the numerical results. The developed mathematical model and the numerical results could be useful to electric power systems engineers.

Keywords: Mathematical model, Lossy transmission, reactive power transmission costs.

Bi-Derivatations on Semiprime Rings

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ABSTRACT

The main purpose of this paper is study and investigate some results concerning a symmetric bi-derivation $D : R \times R \to R$ of prime rings R, where R admits for a symmetric bi-derivation D satisfying new conditions on R.

AMS Mathematics Subject Classification(2000): Primary 05C38, 15A15
Secondary 05A15, 15A18.
Keywords: Symmetric bi-derivation, Derivation, Central mapping, Semiprime rings.

Noncommutative Semiprime Rings With Generalized Derivations

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ABSTRACT

The main purpose of this paper is to study and investigate some results concerning generalized derivation D on 2-torsion free noncommutative semiprime ring R , U is non-zero ideal of R ,then $d(U) = 0$ and d is centralized of U.

AMS Mathematics Subject Classification(2000): 16W25, 16U60, 19U80
Keywords: Semiprime rings, Prime rings, Derivations, Generalized derivation.

On the classification of complex analytic map-germs of $\mathcal{A}_e$-codimension 2

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ABSTRACT

The $\mathcal{A}$-classification of complex analytic map-germs is discussed, based on the theory of ${}_V\mathcal{K}$-equivalence: the restriction of $\mathcal{K}$-equivalence to those preserving a particular subset of the singularity's domain. An $\mathcal{A}$-classification of corank 1 $\mathcal{A}_e$-codimension 2 map-germs $(\mathbb{C}^n, 0) \to (\mathbb{C}^{n+1}, 0)$ is carried out.

AMS Mathematics Subject Classification(2000): 58C25, 58K40, 58K65
Keywords: $\mathcal{A}$-equivalence, ${}_V\mathcal{K}$-equivalence, The minimal cross-cap mapping, Liftable vector fields, Complete Transversals .

Two Kinds of Mixed Almost Unbiased Estimators

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ABSTRACT

In this paper, two kinds of mixed estimators are introduced based on prior information in the linear model with stochastic linear restrictions for the unknown vector parameter when stochastic linear restrictions on the parameters hold. We show that the new estimators are generalization of the mixed estimator (ME), the almost unbiased ridge estimator (AURE), the almost unbiased Liu estimator (AULE) and the least squares estimator (LSE) . The Performances of the new estimators in comparison to other estimators in terms of the mean squares error matrix (MMSE) are examined. Numerical example from literature and simulation study have been given to illustrate the results.

AMS Mathematics Subject Classification: 62J05, 62J07
Keywords: Mixed estimator, Stochastic linear restictions, Almost unbiased ridge estimator, Almost unbiased Liu estimator.

A Study on the Bases of Space of Vector Valued Entire Multiple Dirichlet Series

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ABSTRACT

Let $f(s_1, s_2) = \sum_{m,n=1} \infty a_{m,n} e^{s_1\lambda_m + s_2\mu_n}$, $(s_j = \sigma_j + it_j, j = 1, 2)$, where

$$0 < \lambda_1 < \lambda_2 < \cdots < \lambda_m \to \infty \quad \text{as} \quad m \to \infty$$

$$0 < \mu_1 < \mu_2 < \cdots < \mu_n \to \infty \quad \text{as} \quad n \to \infty$$

being an increasing sequences of positive numbers and

$$\lim_{m\to\infty} \frac{\log m}{\lambda_m} = 0 = \lim_{n\to\infty} \frac{\log n}{\mu_n}$$

where $a_{m,n} \in E$ and E is Banach algebra, represent a vector valued entire Dirichlet functions in two variables. The space Γ of all such entire functions having order at most equal to ρ is considered in this paper. A metric topology using the growth parameters of f is defined on Γ and its various properties are obtained. The form of linear operator on the space Γ is characterized and proper bases are also characterized in terms of growth parameters ρ.

System Reliability Estimation of Models using Exponentiated Exponential Distribution

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ABSTRACT

This article deals with estimations of system Reliability for one component, two and s-out-of-k stress-strength system models with non-identical component strengths which are subjected to a common stress, using Exponentiated Exponential distribution with common scale parameter. Based on simulation, comparison studies are made between the ML, PC and LS estimators of these system reliabilities when scale parameter is known.

Disk-Cyclicity

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ABSTRACT

Let $\mathcal{H}$ be an infinite-dimensional separable complex Hilbert space. Motivated by supercyclicity, we define *disk–cyclicity*, namely, an operator T is called *disk–cyclic* if there is a vector x in $\mathcal{H}$ such that

$$\{\alpha T^n x | n \geq 0, \alpha \in \mathbb{C}; \alpha \leq 1\}$$

is norm-dense in $\mathcal{H}$, such a vector is called a *disk–cyclic vector for* T.

In this paper, we list some basic properties of disk-cyclic operators and vectors ($\S 1$). We study necessary and sufficient conditions for an operator to be disk–cyclic ($\S 2$). Finally, we study some of the spectral properties of it ($\S 3$).

On δ-Small Projective Modules

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ABSTRACT

Let R be a commutative ring with unity and let M be a non-zero unitary R-module. In this work we present a δ-small projective module concept as a generalization of small projective. Also we generalize some properties of small epimorphism to δ-small epimorphism. We also introduce the notation of δ-small Hereditary modules, δ-small projective covers.

Numerical Solution of Thin Plates Problem Using G-spline-Based Differential Quadrature Method

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ABSTRACT

The differential quadrature method with Chebyshev Gauss Lobatto sampling points is introduced for the modeling of vibration of a square thin plate. The g-spline interpolation function is utilized to obtain the explicit formula of the weighting coefficients for approximation of derivatives. Numerical example is presented to demonstrate the validity and accuracy of the proposed method.

Keywords: Differential Quadrature method, g-spline interpolation formula.

Some results of a class of univalent functions with positive coefficients

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ABSTRACT

In this paper , we study a new subclass $RM(B, \tau, \theta)$ of univalent analytic functions with positive coefficients in the unit disk, we obtain main result, distortion theorem and some properties of this subclass.

AMS Mathematics Subject Classification: 30C45
Keywords: Univalent Function, Distortion Theorem, Linear Combination.

Stability and Bifurcation of Epidemic Model

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ABSTRACT

In this paper a mathematical model that describes the flow of infectious disease in a population is proposed and studied. It is assumed that the disease divided the population into four classes: susceptible individuals (S), vaccinated individuals (V), infected individuals (I) and recover individuals (R). the impact of immigrants, vaccine and external sources of disease, on the dynamics of $SVIRS$ epidemic model is studied. The existence, uniqueness and boundedness of the solution of the model are discussed. The local and global stability of the model is studied. The occurrence of local bifurcation as well as Hopf bifurcation in the model is investigated. Finally the global dynamics of the proposed model is studied numerically.

Keywords: Epidemic models, Stability, Vaccinated, Immigrants, External sources, Local and Hopf bifurcation.

The dynamics of one harmful phytoplankton and two completing zooplankton system

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ABSTRACT

In this paper a mathematical model consisting of harmful phytoplankton and two competing zooplankton is proposed and studied. The existence of all possible equilibrium points is carried out. The dynamical behaviors of the model system around biologically feasible equilibrium points are studied. Suitable Lyapunov functions are used to construct the basins of attractions of these points. Conditions for which the proposed model persists are established. The occurrence of local bifurcation and a Hopf bifurcation are investigated. Finally, to confirm our obtained analytical results and specify the vital parameters, numerical simulations are used for a hypothetical set of parameter values.

Keywords: Phytoplankton-zooplankton, Stability, Local bifurcation, Hopf bifurcation.

The impact of switching on the dynamics of prey-predator model for a switching tendency

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ABSTRACT

In this paper, a mathematical model, consists from a stage structured predator interacting with prey which is assumed to live in two distinct habitats, and the predator has the tendency to switch among these habitats, is proposed and analyzed. The existence, uniqueness of the solution of the proposed model are discussed. The existence and the stability analyses of all possible equilibrium points are studied. Because of difficulty of analytical computation The global stability of these equilibrium points and the persistence of the model will be studied numerically.

The effect of disease transition from different sources the dynamics of eco-epidemiological model

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ABSTRACT

In this paper, a prey-predator model with infectious disease in predator population is proposed and studied. It is assumed that the disease transmitted within the population through contact as well as an external source. The existence, uniqueness and boundedness of the solution are discussed. The stability analyses of all possible equilibrium points are carried out. Finally, the global dynamics of the proposed system is investigated using numerical simulation.

Keywords: eco-epidemiological model, SIS epidemics disease, prey-predator model, stability analysis.

Stability Analysis of a stage structure prey-predator model with Hollimg type IV functional response

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ABSTRACT

In this paper a stage structure prey-predator model with Hollimg type IV functional response is proposed and analyzed. The local stability analysis of the system is carried out. The occurrence of a simple Hopf bifurcation and local bifurcation are investigated. The global dynamics of the system is investigated with the help of the Lyapunov function. Finally, the analytical obtained results are supported with numerical simulation and the effects of parameters system are discussed. It is observed that, the system has either stable point or periodic dynamics.

Keywords: Holling type IV functional response, equilibrium points, stability, local bifurcation and Hopf bifurcation.

Bayesian Estimation of the Parameter of the Exponential Distribution with different Priors under Symmetric and Asymmetric Loss Functions

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ABSTRACT

In this paper we explore and compare the performance of Bayesian estimators for the shape parameter of the exponential distribution. We consider the extension of Jeffreys as non-informative prior information as well as the inverted gamma conjugate prior and the inverted chi square prior as informative prior information's. Bayes estimators have been obtained under symmetric and asymmetric loss functions; namely, the quadratic loss function QLF and the general entropy loss function GELF, which is a modified version of the LINEX loss function. The comparison was made through a Monte Carlo simulation study on the performance of these estimators with respect to the mean square error MSE. The results of comparison show that Bayes estimators of the shape parameter under the GELF with proper choice of γ, is a suitable alternative to the QLF when the loss is asymmetric in nature. Comparison also show that the informative priors performed better than the non-informative prior. Accordingly; if adequate information is available about the parameters it is preferable to use conjugate informative priors, otherwise the extension of Jeffrey's prior gives quite reasonable results.

Keywords: Exponential distribution, Bayes Estimators, non-informative and informative priors, conjugate prior, quadratic and general entropy loss functions.

S-Cquasi–Dedekind Modules

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ABSTRACT

Let R be a commutative ring with 1. A proper submodule N of an R-module M is called a coquasi–invertible submodule of M, if $\mathrm{Hom}(M, N) = 0$. A proper submodule N of an R-module M is said to be a small coquasi–invertible submodule of M, if for every $f \in \mathrm{Hom}(M, N)$, $\mathrm{Im}\, f$ is small in M. In this papar we introduced the definition of the concept of S-coquasi–invertible submodule of M and S-coquasi–Dedekind module . An R- module M is S-coprime module if $\mathrm{ann}(\frac{M}{N}) = \mathrm{ann}(M)$, for every small submodule N of M. we study the relation between S-coprime modules and S-coquasi–Dedekind module. Also we investigate some of their properties that are relevant with our work .

Keywords: Small submodul, coquasi-invertible submodule, self-projective module.