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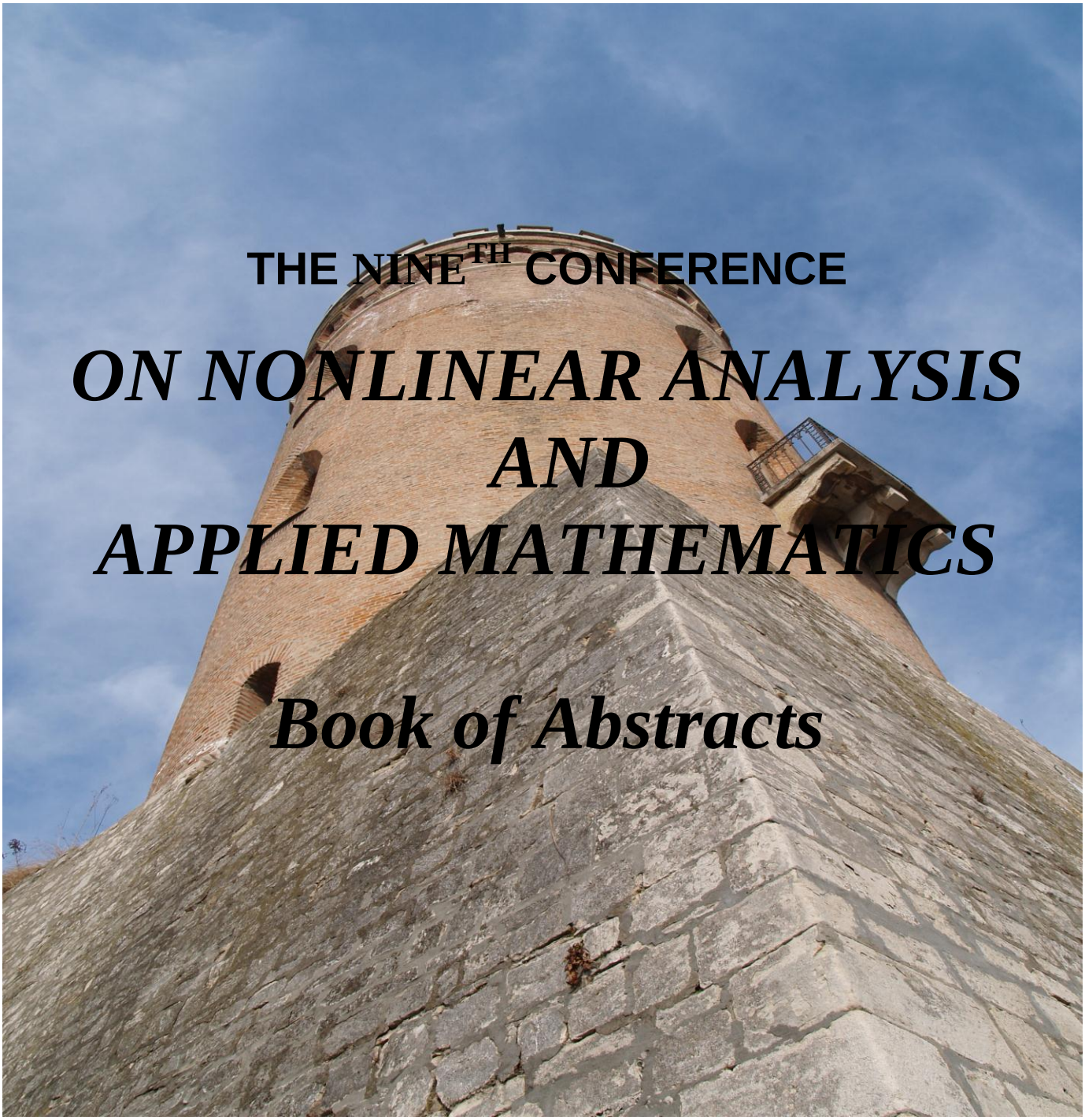

THE NINETH CONFERENCE

ON NONLINEAR ANALYSIS AND APPLIED MATHEMATICS

Book of Abstracts

Târgovişte, June, 10th –11th, 2011

THE NINETH CONFERENCE

ON NONLINEAR ANALYSIS AND APPLIED MATHEMATICS

Târgovişte, June, 10th –11th, 2011

Sections:

- **Differential Equations and Nonlinear Analysis**
- **Mathematical Analysis and Applied Mathematics**
- **Didactics of Mathematics**

Scientific Comittee:

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PLENNARY CONFERENCES

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SILVIU SBURLAN

THE BIHARMONIC PROBLEM FOR THE HALF PLANE AND THE ANALYTICAL SOLVE OF THE PLANE THERMO ELASTICITY PROBLEM

MIRCEA LUPU
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ON HYERS –ULAM STABILITY OF DIFFERENTIAL EQUATIONS

DORIAN POPA
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CONFERENCE PROGRAMME

Friday 10.06.2011

Time	Action
9.00-12.00	Participants Registration
13.00-13.45	Welcome and Opening Ceremony
13.45-14.30	Lunch
14.30-15.30	Plenary Conferences
15.30-16.00	Coffee Break
16.00-18.00	Concurrent Sessions
18.00-18.15	Coffee Break
18.15-19.15	Concurrent Sessions
20.00	Official Dinner

Saturday 11.06.2011

Time	Action
9.30-10.00	Breakfast
10.00-13.00	Visiting Historic Places in Targoviste
13.00-14.00	Lunch
14.00	Participants Departure

List of Participants (Alphabetical Order):

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ON AN INEQUALITY OF OSTROWSKI TYPE

ANA MARIA ACU, FLORIN SOFONEA

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Abstract: The main purpose of this paper is to derive new inequalities of Ostrowski type in the weighted case. New estimations of the remainder term in quadrature formulas are obtained. Also, the two-point Ostrowski inequality is considered.

ON A PROPERTY OF THE SPLINE FUNCTIONS

ADRIAN BRANGA, EUGEN CONSTANTINESCU

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Abstract: The definition of the spline functions as solutions of a variational problem is presented in the preliminaries of this paper and are shown some theorems regarding to the existence and uniqueness. The main result of this article consists of a property verified by the spline functions in connection with the spaces of functions used.

APPLICATIONS OF DIRICHLET'S PRINCIPLE IN GEOMETRY

DAN COMA

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Abstract: In this work we recall the principle of Dirichlet (given in 1834) and we enounce some equivalents of it. In the final part, we solve some problems of geometry using the principle of Dirichlet.

FREE BOUNDARY FLOW PAST CIRCULAR OBSTACLES

ADRIAN CARABINEANU and STEFAN GICU CRUCEANU

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Abstract: We utilize the Helmholtz model to calculate the conformal mapping of the domain of motion from the physical plane onto a canonic domain from the plane of the potential complex. The problem is reduced to the study of a Hammerstein integral equation which is solved by means of the arclength continuation method.

ON A CLASS OF SUBMANIFOLDS OF A KENMOTSU MANIFOLD

MARIA CIRNU

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Abstract: In this paper we study some properties of a class of normal anti-invariant submanifolds in Kenmotsu manifolds, called the class of Whitney spheres. We also prove that Whitney type spheres have a closed conformal vector field in Kenmotsu space forms.

INEQUALITIES FOR LINEAR BOUNDED OPERATORS ON HILBERT SPACES

LOREDANA CIURDARIU

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Abstract: We shall consider B(H) as being the space of linear and bounded operators on Hilbert space H and B*(H) the space of linear and bounded operators which admit gramian adjoint on H, when H is a pseudo-Hilbert space. We will improve some equalities and inequalities from [1] and [2].

[1] Ciurdariu L., On Bergstrom inequality for commuting gramian normal operators, Journal of Mathematical Inequalities, 4, No. 4, (2010), 505-515.

[2] FujiZuo, Fujii M, Zuo H., Matrix order in Bohr inequality for operators, Banach J. Math. Anal. 4 (2010), no. 1, 21-27.

OPTIMALITY IN NONDIFFERENTIAL MULTIOBJECTIVE PROGRAMMING

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Abstract: This paper is concerning on the multiobjective programming problem where the function involved are nondifferentiable. We present and prove the sufficient conditions for a feasible point to be weakly efficient. Our research starts from the invexity proposed by H. Slimani and M.S. Rajdef and extend their concept for the case when the functions are nondifferentiable. To solve the problem in this new framework we show how local cone approximation concept can be used. Thus we provide a new approach for the nondifferentiable multiobjective programming problems that can be easily applied in the practical problems.

THE OPTIONAL MATH SUCCESS BETWEEN ATTRACTIVENESS AND PERFORMANCE

EMILIAN DEACONESCU

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Abstract: In 1998 is a landmark year for the Romanian education . Year 1998 has brought so much reform that was needed , replacing the notion of curriculum based curriculum , thus giving the teacher a new quest but noble at the same time . This change was received with reluctance, even in disbelief was quickly transformed from a threat into an opportunity Professor of mathematics was very fast accountable , and the experience and creativity have greater skills, while also contributing to the prestige of the school . Mathematics is a subject that appeals to a significant number of students . Considered by many frighteming it has a well defined role , to form a creative thincking, well structured to develop intelligence to lead logically to emanate passion and joy in his study. The optional math professor suggested by students should be interesting, attractive, to develop personality, to assume the communication, participation and involvement, have the student center .
Professor of mathematics has a place of his school life and well defined especially his foolowers , which leads , them to masterfully nooks and mind . Professional approach proposed activities will certainly encourage the attraction and fun but at the same time, stimulating the pleasure and interest in science penetrated all spheres of everyday mathematics .

STUDY OF THE FINITE FINAL POINT OPTIMAL PROBLEM

NINA DRĂGOESCU CAZACU

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Abstract: In the following presentation we shall present a semi-inverse method for obtaining the analytical formula and the graphical representation of the trajectory and optimal control for a class of control problems.

ON MEAN VALUE THEOREMS IN INTEGRAL CALCULUS

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Abstract: In this paper we present some interesting applications of the mean value theorems for integration.

AN OPTIMAL ENCODING AND DECODING A PRÜFER SEQUENCE USING PRIORITY QUEUES

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Abstract: Spanning trees have been studied extensively and have many practical applications. From astronomers using spanning trees to find quasar superstructures, to biomedical engineers deteting actin fibers (actin defines a protein) in cell images tree enumeration remains an interesting problem. We will first examine a simple and practical algebraic approach for the enumeration of spanning trees in complete and non-complete graphs based on Cayley's formula and Kirchhoff's Theorem. Cayley's formula shows that a complete graph with n vertices has n^{n-2} distinct spanning trees. Prüfer's proof achieves this result constructively by describing a one-to-one correspondence between the spanning trees on n vertices and strings of length $(n-2)$ over an alphabet of n symbols. The demonstration describes two algorithms: one identifies the spanning trees cover corresponding Prüfer string, and other building Prüfer string corresponding to a list of edges in spanning tree. Naïve implementations of these algorithms have time complexity that is $O(n^2)$ where n is the number of vertices in tree; appropriate use of priority queues to reduce complexity for both algorithms to $O(n \log n)$.

FORMULATIONS OF A FREE BOUNDARY PROBLEM OF PARABOLIC TYPE, MODELLING THE BUBBLING PHENOMENON

CONSTANTIN GHIŢĂ

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Abstract: During a bubbling process of molten metal we emphasized, from the theoretical point of view, a piezo-metric capacity of the saturated zone and we formulated a Stefan problem for the bubbling process. There are obtained the theoretical consequences of the directional evolution of the purifying fluid front, which train with him the non metallic inclusions. Dependence of the saturated zone geometry of the insufflate fluid is highlight. The directional degassing expressed as an unilateral problem for the piezo-metric capacity of the saturated zone allows the introduction of some structural parameters: directional and residual piezo-metric capacities, which permit us the control of the phenomenon evolution within initial data. The weakness of the initial data regularity of the data of the bubbling equations allows the formulation of an existence result of a weak solution. The regularization techniques will permit to prove the existence result. Particularly, the weak solution is identified with a classical solution of the Stefan problem; for the general case, only locally, the weak solution can be identified with a classical one.

FUNCTION OF COMPLEX VARIABLE WITH MATHEMATICA

OCTAVIAN MIRCIA GURZĂU

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Abstract: In tis paper we present some notions from the theory of complex functions using, for clarification and examplification, MATHEMATICA, a complex soft for mathematics

APPLICATION OF VARIATIONAL CALCULUS TO MEDECINE IMAGING

OCTAVIAN MIRCIA GURZĂU

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Abstract: In this paper we present an application of the Euler-Gauss-Ostrogradsky equation to medical imaging, and corresponding numerical methods to integrate this equation.

SYMBOLIC CALCULUS WITH PROLOG

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Abstract: The aim of this article is to show how logic programming may be used in symbolic calculus. Also it is presented a way to integrate prolog codes in Java applications.

ON THE MIRAKJAN –FAVARD-SZASZ BIVARIATE APPROXIMATION FORMULA

DAN MICLAUS

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Abstract: In the present paper we establish the form of remainder term associated to the Mirakjan-Favard-Szasz bivariate approximation formula, using the divided differences.

IDENTIFICATION OF EULER-BERNOULLI CABLE PARAMETERS BY INVERSE METHODS

MARCEL MIGDALOVICI , TUDOR SIRETEANU, EMIL MATEI VIDEA, ANA MARIA MITU

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Abstract: The problem of vibration control of transmission lines subjected to laminar transverse wind, which induce stationary vibrations by Kármán effect, is of high importance due to consequences upon these structures lifetime and service. We consider the cable model as Euler-Bernoulli beam, fulfilling the author condition that detaches the cable model of the beam model with viscous, hysteretic or dry friction internal damping hypothesis. Other parameters of the cable, and also of the beam, take into account the mass unit length of the cable, the bending rigidity of the cable, the tension in the cable, the rigidity of the cable and the span length of the cable. The rigidity of the cable as a coefficient of the transverse displacement of the cable is a new parameter in our theoretical model that distinguishes the actual cable model from previous modeless. The aeolian vibration control of the cable is based on the energy balance principle that takes into account the wind energy input, the energy dissipated by the cable due to hysteretic self-damping properties (or equivalent viscous damping) and eventually, the energy dissipated by the Stockbridge dampers. The aim of this approach is to mitigate the vibration level of transmission lines. The original analytical expression of the free vibration modes in undamped and damped conditions and the resonance frequencies equation, both for the beam and for the cable, in some boundary conditions, has been produced. These results are essentially for accurate beam or cable model parameters identification. In the paper is underlined the property of any Euler-Bernoulli beam model to be substituted, for sufficient high frequencies, by our cable model because our hypothesis of the cable is respected by Euler Bernoulli beam in these conditions. The classical analytical solutions of the Euler-Bernoulli beam equation are effectively applicable only for low frequencies, but for high frequencies (see the case of fuel bundle beams of the nuclear power plant) our cable model gives the analytical solutions. The experimental research was performed on a specialized stand endowed with the overhead cable with clamped extremities. The resonance frequencies and vibration modes are identified theoretically and experimentally also, in the stand. The possibility to analyse the influence of the concentrated harmonic force, applied on the cable middle span was analysed. The analytical and experimental aspects on the internal damping terms influence versus frequency, in the beam or cable models, are discussed, using inverse methods. The authors attempt to answer to the question about how much can lead the analytical phase in deduction of the mathematical model of mechanical phenomena up to replacing with the numerical phase using the précised values of the mathematical model parameters.

ABOUT A TECHNIQUE OF SOLVING DIFFERENTIAL STOCHASTIC EQUATIONS

DOINA MIHAI, CAMELIA RADULESCU

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Abstract: The differential stochastic systems modelled the evaluative phenomena of environment perturbed by stochastic forces. In this paper are solved some differential stochastic systems for a vibrating string subject to a stochastic force and electric circuit, using the Itô's formula.

SOME REMARKS ON RAMANUJAN FORMULA

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Abstract: The aim of this work is to present some historical facts about, Ramanujan's formula and some recent results.

ASSESSING AIR QUALITY INDEX USING FUZZY INFERENCE SYSTEMS

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Abstract: This work presents the use of fuzzy techniques for Air Quality Index (AQI) assessments. In Romania, AQI is established on a scale from 1 to 6 (1-excellent, 6-very bad) using data acquired by automated stations of the National Network of Air Quality Monitoring (RNMCA). The selection of AQI is made taking into account the worst value from a set of specific indices. Specific indices are established using 6 intervals of pollutant concentrations such as sulfur dioxide (SO_2), nitrogen dioxide (NO_2), Ozone (O_3), Carbon monoxide (CO) and particulate matter (PM10). At least three specific indices should generally be available to calculate the general AQI. In this paper, large time series of SO_2, NO_2 and PM10 were used as inputs in a Mamdani fuzzy inference system (FIS) to model the AQI output in a more intuitive matter. All defined rules were evaluated in parallel in a random order. The triangular and trapezoidal membership functions fitted to the intended purpose of computational efficiency. Values of membership functions were transformed into output by defuzzyfication of the scalar value, representing the output indicator that efficiently evaluated the air quality status. Finally, FIS output was statistically analyzed estimating central tendency, dispersion characteristics and distribution patterns.

THE BIHARMONIC PROBLEM FOR THE HALF PLANE AND THE ANALYTICAL SOLVE OF THE PLANE THERMO ELASTICITY PROBLEM

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Abstract: Using the representations of the solution of Dirichlet problem for the half plane, the basic biharmonic problem (BHP) is solved in the domain. Applying the half plane theorem an Almansi type representation of the solution is given by direct or analytical methods. New formulas are proved for special cases some applications are presented.
In this paper, analytical methods for the solution of the plane problem of the thermoelastic equilibrium (PPTE) by means of complex functions are presented.

APPLICATIVE STUDIES FOR MATHEMATICAL MODELS USING DIFFERENTIAL OR INTEGRAL OPERATORS OF NON INTEGER ORDER

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Abstract: In this paper are presented integral-differential operators of non-integer order (fractional). Some definitions, properties, operations for differential or integral equations of non-integer order, theorems of existence and uniqueness are given. Are obtained direct solutions (analytic-numerical) of the Cauchy problems, boundary problems or with operational methods (the Laplace transform), adapted for these theories. Are presented mathematical models leading to these theories from: dynamical systems, Abel equations, systems from electrodynamics, dispersions, heat and mass transfer, Couette movement in viscous fluids, deformations of the viscous elastics environments determined by new constitutive laws. For these applications are determined the solutions using some techniques of calculus for these operators of non-integer order.

MINUNEA LUI MORLEY

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THE MATHEMATICAL ANALYSIS OF ULTRASONIC WAVES PROPAGATION APLICATED TO REALIZATION OF HIGH POWER PIEZOELECTRIC TRANSDUCERS

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Abstract : The high energy ultrasound it is generated by piezoelectric elements which are excited from electric signal obtained from an electronic generator. The transmission of this high energy it is obtained by transmission element or concentrator element in function of what we want to do with this energy especial in no conventional technology. The efficiency work is very important aspect because the energy utilizes has high values. In this paper it is presented methods to calculate the elements components necessary to generates and transmission the high ultrasound energy: piezoelectric transducers and transmission / concentrator elements. It is presented the experimental results obtained with the theory presented. Original contribution consists by method used and suggestive graphics for appreciation of variations parameters.

NUMERICAL METHODS FOR SHAPE OPTIMIZATION OF CONTACT PROBLEMS

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Abstract: This speak deals with topology and shape optimization of an elastic contact problem. The structural optimization problem for elastic contact problem is formulated. Shape as well as topological derivatives formulae of the cost functional are provided using the material derivative [2] and the asymptotic expansion [4] methods, respectively. These derivatives are employed to formulate necessary optimality condition for simultaneous shape and topology optimization. Level set based numerical algorithm for the solution of the shape or topology optimization problem is proposed. The finite element method is used as the discretization method.

BINARY OPERATIONS ASSCIABLE WITH A GROUP OPERATION

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Abstract: Conditions under wich tho binary operations on a set M are associable were givenby J. Dhombres in the case when the operations are asociative. We characterize the associability of two group operations by using the binary reduces(in Hosszu'sence) of an n-group. We show that by the juxtaposition of two such operations an operation of 3-group is obtained.

PROBLEMS WITH LATTICES DEFINED BY EQUIVALENCE RELATIONS

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Abstract: The goal of this paper is to present some general ideas which allow a unitary approach for some problems of I.M.O or I. M. C. type. The theoretical aspects which are necessary for solving such problems are simple algebraic notions as: equivalence relation, qotient set, latticeal network, measure set, Dirichlet principle. The complexity and the diversity of the chosen problems prove the efficiency of the proposed model.

ON HYERS –ULAM STABILITY OF DIFFERENTIAL EQUATIONS

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Abstract: Hyers-Ulam stability is one of the main topics in functional equation theory. Generally, a functional equation is said to be stable in Hyers-Ulam sense if for every solution of the perturbed equation there exists a solution of the equation near it.
We give some results on Hyers-Ulam stability for the first order linear differential equation, the linear differential equation of higher order with constant coefficients and the partial differential equation of the first order in Banach spaces.

METODA DE CONTINUARE PENTRU PROBLEME LA LIMITA CU OPERATORI UNIFORM ELIPTICI

ELEONORA RAPEANU

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Abstract : In această notă studiem o metodă de continuare care leagă problema lui Dirichlet pentru operatorii lui Laplace cu problema Dirichlet corespunzătoare unui operator liniar elliptic. Reuşim astfel să demonstrăm existenţa unicitatea şi stabilitatea acestei probleme folosind existenţa, unicitatea şi stabilitatea problemei Dirichlet.

REVIZUIREA PROGRAMEI SCOLARE PT MATEMATICA IN LICEU IN VIZIUNEA LEGII EDUCATIEI NATIONALE

GHEORGHE RADUCANU

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Abstract :
Lucrarea isi propune sa restructureze actuala programa scolara si sa o adapteze la un nou buget de timp in care profesorul decide pana la 25%din timp.Se incearca identificarea unui nucleu de cunostinte si abilitati necesare atat elevilor care ajung in liceu cu lacune dar si acelor elevi capabili de performanta. Profesorul nu mai trebuie sa fie stresat de parcurgerea unei programe stufoase, ci sa fie preocupat de strategiile de folosire a timpului la dispozitie si de cum ii convinge pe parinti si copii(sau sefii) ca fac ceea ce trebuie.

CATEVA METODE NONSTANDARD DE DEMONSTRARE A PROBLEMELOR DE COLINIARITATE

TUDOR RADU

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Abstract : In aceasta lucrare prezentam unele metode neobisnuite de a demonstra problemele de coliniaritate. Una dintre acestea consta in folosirea transformarilor geometrice si ne referim aici in special la inversiune.

BIFURCATII IN CURGEREA FLUIDELOR

SILVIU SBURLAN
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Abstract : Curgerea este o caracteristica esentiala in mecanica fluidelor cu implicatii serioase si in alte domenii. De exemplu, in cartea sarbatoritului nostru,[2], se studiaza probleme de curgere care apar la turnarea continua in metalurgie. De fapt, chiar in definitie intr-o exprimare libera prin fluid intelegem un mediu continuu care curge. Legat de aceasta este turbulenta, fenomen neexplicat inca din punct de vedere matematic. Aceasta lucrare cuprinde cateva rezultate ale fostilor mei doctoranzi,[4] si [6,7], relative la multiplicitatea solutiilor problemelor, initiale si la limita, care guverneaza curgerea. Ele sunt prezentate pe larg intr-o carte, [1], ce va apare in curand.

ON THE FIRMLY NONEXPANSIVE PERTURBATIONS OF THE IDENTITY IN HILBERT SPACES

DINU TEODORESCU
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Abstract: A result regarding the properties of firmly nonexpansive operators is presented. Finally, a fixed point theorem is deduced.

MAYAN CIVILISATION AND MATHEMATICS

MARINA TOMA

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Abstract: Knowledge of the Mayan civilisation has been greatly increased in the last thirty years. Modern techniques such as high resolution radar images, aerial photography and satellite images have changed conceptions of the Maya civilisation. We are interested in the Classic Period of the Maya which spans the period 250 AD to 900 AD, but this classic period was built on top of a civilisation which had lived in the region from about 2000 BC.

PROBABILITY GENERATING FUNCTION AND ITS APPLICATIONS

GEORGIANA VELICU

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Generating functions are widely used in mathematics, and play an important role in probability theory. Considering a sequence $\{a_i / i = 0,1,2,...\}$ of real numbers, the ordinary generating function of this sequence is:

$$G(s) = \sum_{i=0}^{\infty} a_i s^i ,$$

for those values of the parameter *s* for which the sum converges.

If we consider now a discrete random variable *X* taking non-negative integers values $\{0,1,2,\ldots\}$ then the *probability-generating function* of X is defined as:

$$G_X(s) = \sum_{i=0}^{\infty} p_i s^i ,$$

where $p_i = P(X = i) \in [0,1]$ (if *X* takes finite number of values, we simply attach zero probabilities to those values which cannot occur). Note that $G_X(1) = 1$, so the series converges absolutely for $|s| \le 1$. Also $G_X(0) = p_0$. So $G_X(s)$ may be differentiated or integrated term by term any number of times. Probability generating function have interesting properties and reduce the the hard work of determining the moments for a discrete random variable *X*, for example the moments for a variable who have Poisson distribution or geometric distribution.

SOME REMARKS ON THE SUPERMEDIAN FUNCTIONS WITH RESPECT TO A NONLINEAR RESOLVENT

CORNELIU UDREA

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Abstract. The image of the null function by a nonlinear operator is not usually the null function.Thus , while a supermedian function with respect to a linear resolvent is a non-negative map , a supermedian function with respect to a nonlinear resolvent is arbitrary. By translation we transform the class of supermedian functions with respect to a nonlinear resolvent into a similar class of non-negative functions.

SEARCHING THE SPEEDS OF CONVERGENCE

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Abstract: We present some illustrations of a method to search the speed of convergence of the sequences of real numbers to its limits.

Plenary Conferences
Friday – June, 10th, 2011

(Chairman: Silviu Sburlan)

14.30-15.00	***Mircea Lupu*** **- The Biharmonic Problem For The Half Plane And The Analytical Solve Of The Plane Thermo Elasticity Problem**
15.00-15.30	***Dorian Popa*** **- On Hyers – Ulam Stability Of Differential Equations**

Concurrent Sessions
Friday – June, 10th, 2011

Nonlinear Analysis and Differential Equations
(Chairmans: Adrian Carabineanu, Constantin Ghita)

16.00-16.15	**Silviu Sburlan -BIFURCATII IN CURGEREA FLUIDELOR**
16.15-16.30	**Adrian Carabineanu; Gicu Stefan Cruceanu - FREE BOUNDARY FLOW PAST CIRCULAR OBSTACLES**
16.30-16.45	**Vasile Pop - BINARY OPERATIONS ASSCIABLE WITH A GROUP OPERATION**
16.45-17.00	**Corneliu Udrea - SOME REMARKS ON THE SUPERMEDIAN FUNCTIONS WITH RESPECT TO A NONLINEAR RESOLVENT**
17.00-17.15	**Dinu Teodorescu - ON THE FIRMLY NONEXPANSIVE PERTURBATIONS OF THE IDENTITY IN HILBERT SPACES**
17.15-17.30	**Mircea Lupu; Horia Banea - APPLICATIVE STUDIES FOR MATHEMATICAL MODELS USING DIFFERENTIAL OR INTEGRAL OPERATORS OF NON INTEGER ORDER**
17.30-17.45	**Ana Maria Acu, Florin Sofonea – ON AN INEQUALITY OF OSTROWSKI TYPE**
17.45-18.00	**Constantin Ghita - FORMULATIONS OF A FREE BOUNDARY PROBLEM OF PARABOLIC TYPE, MODELLING THE BUBBLING PHENOMENON**
18.15-18.30	**Maria Cîrnu - ON A CLASS OF SUBMANIFOLDS OF A KENMOTSU MANIFOLD**
18.30-18.45	**Loredana Ciurdariu - INEQUALITIES FOR LINEAR BOUNDED OPERATORS ON HILBERT SPACES**
18.45-19.00	**Octavian Mircia Gurzau - APPLICATION OF VARIATIONAL CALCULUS TO MEDECINE IMAGING**

Applied Mathematics
(Chairmans: Nicolae Pop, Octavian Mircia Gurzau)

16.00-16.15	**Octavian Mircia Gurzau - FUNCTION OF COMPLEX VARIABLE WITH MATHEMATICA**
16.15-16.30	**Nicolae Pop- NUMERICAL METHODS FOR SHAPE OPTIMIZATION OF CONTACT PROBLEMS**
16.30-16.45	Marcel Migdalovici , Tudor Sireteanu, Emil Matei Videa, Ana Maria Mitu - IDENTIFICATION OF EULER-BERNOULLI CABLE PARAMETERS BY INVERSE METHODS
16.45-17.00	**Grigore Odobescu - THE MATHEMATICAL ANALYSIS OF ULTRASONIC WAVES ROPAGATION APLICATED TO REALIZATION OF HIGH POWER PIEZOELECTRIC TRANSDUCERS**
17.00-17.15	**Eleonora Râpeanu -METODA DE CONTINUARE PENTRU PROBLEME LA LIMITA CU OPERATORI UNIFORM ELIPTICI**
17.15-17.30	**Dan Miclaus- ON THE MIRAKJAN –FAVARD-SZASZ BIVARIATE APPROXIMATION FORMULA**
17.30-17.45	**Adrian Branga; Eugen Constantinescu - ON A PROPERTY OF THE SPLINE FUNCTIONS**
17.45-18.00	**Nina Dragoescu Cazacu - STUDY OF THE FINITE FINAL POINT OPTIMAL PROBLEM**
18.15-18.30	**Daniel Dunea, Alin Pohoata, Emil Lungu - ASSESSING AIR QUALITY INDEX USING FUZZY INFERENCE SYSTEMS**
18.30-18.45	**Doina Mihai, Camelia Radulescu - ABOUT A TECHNIQUE OF SOLVING DIFFERENTIAL STOCHASTIC EQUATIONS**
18.45-19.00	**Alina Constantinescu - OPTIMALITY IN NONDIFFERENTIAL MULTIOBJECTIVE PROGRAMMING**
19.00-19.15	**Cristinel Mortici - SOME REMARKS ON RAMANUJAN FORMULA**

Mathematical Analisys and Didactics of Mathematics
(Chairmans: Marina Toma, Dumitru Fanache)

16.00-16.15	**Marina Toma - MAYAN CIVILISATION AND MATHEMATICS**
16.15-16.30	**Georgiana Velicu - PROBABILITY GENERATING FUNCTION AND ITS APPLICATIONS**
16.30-16.45	**Emilian Deaconescu - THE OPTIONAL MATH SUCCESS BETWEEN ATTRACTIVENESS AND PERFORMANCE**
16.45-17.00	**Dan Coma - APPLICATIONS OF DIRICHLET'S PRINCIPLE IN GEOMETRY**
17.00-17.15	**Miron Oprea –MINUNEA LUI MORLEY**
17.15-17.30	**Vasile Pop - PROBLEMS WITH LATTICES DEFINED BY EQUIVALENCE RELATIONS**
17.30-17.45	**Emil Lungu - SYMBOLIC CALCULUS WITH PROLOG**
17.45-18.00	**Tudor Radu - CATEVA METODE NONSTANDARD DE DEMONSTRARE A PROBLEMELOR DE COLINIARITATE**
18.15-18.30	**Gheorghe Raducanu - REVIZUIREA PROGRAMEI SCOLARE PT MATEMATICA IN LICEU IN VIZIUNEA LEGII EDUCATIEI NATIONALE**
18.30-18.45	**Andrei Vernescu - SEARCHING THE SPEEDS OF CONVERGENCE**
18.45-19.00	**Sanda-Mioara Descultu - ON MEAN VALUE THEOREMS IN INTEGRAL CALCULUS**
19.00-19[15]	**Dumitru Fanache - AN OPTIMAL ENCODING AND DECODING A PRÜFER SEQUENCE USING PRIORITY QUEUES**