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Editor of series: *Katica (Stevanovi)* Hedrih, e-mail: katica@masfak.masfak.ni.ac.yu

Address: Univerzitetski trg 2, 18000 Niš, YU, Tel: (018) 547-095, Fax: (018)-547-950

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NONLINEAR ANALYSIS AND IT'S APPLICATIONS

International Congress, September 1-5, 1998, Moscow, Russia, pp. 190.

Publisher: Russian Academy of Sciences (RAS), Stability and Nonlinear Dynamics Research Center of Mechanical Engineering Research Institute (MERI), Academy of Nonlinear Sciences (ANS), International Federation of Nonlinear Analysis (IFNA), UNESCO.

This publication contains the 154 abstracts from the Program of International Congress Nonlinear Analysis and it's Applications was held at Moscow in period September September 1-5, 1998. General Chairs of the International Congress were Professors: **V. Lakshmikantham**, IFNA, Florida Institute of Technology, Melbourne (USA) and **V. M. Matrosov**, Academy of Nonlinear Sciences (Russia).

The contents of this publication include following two parts: Plenary Papers (p.5) and Sectional papers and short communications (p.53).

Second part *Sectional papers and short communications* is divided into following Sections:

- Stability and Nonlinear Oscillations;
 - Nonlinear Control Theory;
 - Nonlinear Mechanics;
 - Nonlinear Differential Equations and Analysis;
 - Nonlinear Modeling in Natural and Technical Sciences.
- Abstracts of papers are allocated to corresponding sections.

Here we will only quote a selection of the abstracts of the plenary lectures- papers:

V. A. Trenogin, A. M. Ter-Krikorov, N. A. Sidorov (Russia): *Nonlinear Analysis: Inversion of the Nonlinear Operators, Extension by Parameters, Bifurcations, Group Invariance and it's Applications.*

J. Batt (Germany): *Recent Results in the Mathematical Investigation of Two Nonlinear Systems of partial Differential Equations Describing the Evolution of Gravitational and Charged Matter: The Vlasov-Poisson- and the Vlasov-Maxwell-System.*

V. M. Matrosov, E. I. Somov, G. P. Anshakov, V. A. Raevskiy (Russia): *Nonlinear Dynamics of the Notis-Stable Systems of the Control Motion of the Space Equipment.*

S. Leela (USA): *Stability criteria for Fuzzy Differential Equations.*

Leon O. Chua (USA): *Edge of Chos: A Mathematical Characterization.*

V. B. Bajic (South Africa): *The Subsidiary Parametric Functions and Generic Concepts in Qualitative Analysis of System Behavior.*

T. A. Burton (Carbondale): *Periodic Solutions of the Functional Differential Equations.*

K. V. Frolov (Russia): *Human Factor of the Technologic Safety as a Nonlinear Dynamical Problems.*

P. K. C. Wang (China): *Bifurcation Problems in Nonlinear Microdistributed Systems.*

Nobuaki Obata (Japan): *Nonlinear Extension of Quantum Stochastic Analysis of Differential*

Equations.

Xilin Fu, Liqin Zhang (China): *Oscillation Properties of Nonlinear Impulsive Partial Differential Equations.*

V. V. Rumyantsev (Russia): *On General Equations of Analytical Dynamics.*

V. V. Bolotin (Russia), A. N. Kounadis (Greece), J. B. Roberts (England): *Stability and Postcritical Vibrations of Nonconservative Deformable Mechanical Systems.*

M. M. Khrustalev (Russia): *Method of Lyapunov-Lagrange Functions in Optimal Control Problem for Distributed Parameter Systems.*

Dan Kannan (USA): *Stability of Some Reducible Singular Markovian Systems.*

B. B. Beletsky (Russia): *Applied Problems of the Dynamical Billiards.*

V. V. Kozlov (Russia): *First Lyapunov Method for Nonlinear Systems.*

V. Lakshmikantham (USA): *Advances in Stability Theory of Lyapunov: Old and New.*

V. E. Pannin, K. V. Frolov (Russia): *Physical Mesomechanics of Structural Instabilities in Solid under Loading.*

V. Vujičić (Yugoslavia): *A new approach to the fundamental concept of classical mechanics.*

Here we will only quote a selection of the abstracts of the short communications-papers:

S. B. Agase (India): *On Constrained Practical Stability.*

F. F. Alekseev (Russia): *Synthesis and Analysis of the Combined Systems on the Base of Nonlinear Analysis.*

Ya. Goltser (Israel): *Invariant Tori and Totally Stable Resonance Modes in Nonlinear Oscillations Theory.*

N. I. Matrossova (Russia): *On Stability of Sets for Differential Equations in Banach Spaces by VLF Method with Comparison System in Critical Case.*

G. I. Melnikov (Russia): *Sequences of Nonlinear Differential Inequalities in Estimations of Stability of Motions.*

M. M. Khapaev (Russia): *Stability and Evolution in the Planetary Problem of Three Bodies.*

Norimichi Hirano (Japan): *Existence of Subharmonic Periodic Solutions for Second Order Ordinary Differential Equations with a Singularity.*

A. G. Butkovskiy (Russia): *Mathematical Structures in the Theory of Control and Systems.*

S. M. Meerkov (USA): *Vibrational Control: Theory and Applications.*

H. H. Dai (Hong Kong): *Existence and Analytical Description of Kink Waves in Incompressible Hyperelastic Rods.*

V. F. Krotov (Russia): *On Genesis of Mass from Field.*

K. (Stevanović) Hedrih (Yugoslavia): *Axoids in the Nonlinear Dynamics of the Heavy Rotors with many Axes of the Rotation (Gyro-Rotors).*

E. Galperin (Canada): *ETA-Equivalent Solutions of Nonlinear PDE-Problems.*

Jean-Pierre Caubet (France): *Differential Equations with or without impulses: Asymptotic Behavior of Solutions and Ergodism.*

S. Pilipović, M. Stojanović (Yugoslavia): *G-Quasiasymptotic Expansion to Nonlinear Generalized Solutions.*

S. Heikkilä (Finland): *On Operator and Differential Equations in Ordered Spaces.*

J. S. Florio (Mexico): *On the Reduction Theory of Stability in Dynamical and Semidynamical Systems.*

K. S. H.