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KEY=NONLINEAR - KOCH RAMOS

IUTAM SYMPOSIUM ON NONLINEAR WAVES IN MULTI-PHASE FLOW

PROCEEDINGS OF THE IUTAM SYMPOSIUM HELD IN NOTRE DAME, U.S.A., 7–9 JULY 1999

Springer Science & Business Media The active field of multi-phase flow has undergone fundamental changes in the last decade. Many salient complex interfacial dynamics of such flows are now understood at a basic level with precise mathematical and quantitative characterization. This is quite a departure from the traditional empirical approach. At an IUTAM Symposium at Notre Dame, in 1999, some of the leading researchers in the field gathered to review the progress thus far and to contemplate future directions. Their reports are summarized in this Proceedings. Topics covered include solitary wave dynamics on viscous film flows, sheet formation and drop entrainment in stratified flow, wetting and dewetting dynamics, self-similar drop formation dynamics, waves in bubbly and suspension flow, and bubble dynamics. It is a unique and essential reference for applied mathematicians, physicists, research engineers, and graduate students to keep abreast of the latest theoretical and numerical developments that promise to transform multi-phase flow research.

ADVANCES IN MULTIPHASE FLOW AND HEAT TRANSFER

Bentham Science Publishers "Multiphase flow and heat transfer have found a wide range of applications in several engineering and science fields such as

mechanical engineering, chemical and petrochemical engineering, nuclear engineering, energy engineering, material engineering, ocea"

NUMERICAL MODELING OF SEA WAVES

Springer Presenting a novel approach to wave theory, this book applies mathematical modeling to the investigation of sea waves. It presents problems, solutions and methods, and explores issues such as statistical properties of sea waves, generation of turbulence, Benjamin-Feir instability and the development of wave fields under the action of wind. Special attention is paid to the processes of dynamic wind-wave interaction, the formation of freak waves, as well as the role that sea waves play in the dynamic ocean/atmosphere system. It presents theoretical results which are followed by a description of the algorithms used in the development of wave forecasting models, and provides illustrations to assist understanding of the various models presented. This book provides an invaluable resource to oceanographers, specialists in fluid dynamics and advanced students interested in investigation of the widely known but poorly investigated phenomenon of sea waves.

GOVERNMENT REPORTS ANNOUNCEMENTS & INDEX

PHYSICAL REVIEW

STATISTICAL PHYSICS, PLASMAS, FLUIDS, AND RELATED INTERDISCIPLINARY TOPICS. E

TIME-DEPENDENT NONLINEAR CONVECTION

Computational Mechanics This title presents some basic topics within the area of time-dependent nonlinear convection.

SCIENTIFIC AND TECHNICAL AEROSPACE REPORTS

APPLIED MECHANICS REVIEWS

IUTAM SYMPOSIUM ON FLUID-STRUCTURE INTERACTION IN OCEAN ENGINEERING

PROCEEDINGS OF THE IUTAM SYMPOSIUM HELD IN HAMBURG, GERMANY, JULY 23-26, 2007

Springer Science & Business Media Proceedings of the IUTAM Symposium on Fluid- Structure Interaction in Ocean Engineering, held in Hamburg, July 23-26, 2007. The study of gravity driven water waves interacting with fixed or freely floating objects is an active and important field of research in ocean engineering. The accurate prediction of large amplitude ship motions or of marine structures in severe seas is still a delicate problem in the field of fluid-structure interaction. While three-dimensional panel methods have reached the state of maturity in linear sea-keeping analysis, the original problem, governed by strongly nonlinear boundary conditions,

is far from being solved efficiently. The principal nonlinearities are associated with the variable wetted surface of the ship hull or the floating body and with the nonlinear hydrodynamic conditions on the free surface. Moreover, marine structures often must be modelled as multibody systems rather than a single body. This causes additional problems due to wave slamming on floating and fixed structures. Furthermore, problems such as coupled structural behavior of submerged or floating systems as well as various wind effects have to be considered for the proper design of offshore systems. This book collects contributions from leading scientists working on the following topics: Ocean waves, probabilistic models of sea waves, fluid-loading on structures including pipes, cables, drill-strings etc., behavior of floating systems, stability and capsizing of ships, coupled structural behavior, sloshing in tanks, CFD validation and verification.

INTERNAL GRAVITY WAVES

Cambridge University Press The study of internal gravity waves provides many challenges: they move along interfaces as well as in fully three-dimensional space, at relatively fast temporal and small spatial scales, making them difficult to observe and resolve in weather and climate models. Solving the equations describing their evolution poses various mathematical challenges associated with singular boundary value problems and large amplitude dynamics. This book provides the first comprehensive treatment of the theory for small and large amplitude internal gravity waves. Over 120 schematics, numerical simulations and laboratory images illustrate the theory and mathematical techniques, and 130 exercises enable the reader to apply their understanding of the theory. This is an invaluable single resource for academic researchers and graduate students studying the motion of waves within the atmosphere and ocean, and also mathematicians, physicists and engineers interested in the properties of propagating, growing and breaking waves.

APPLIED ASYMPTOTIC ANALYSIS

American Mathematical Soc. "The book is intended for a beginning graduate course on asymptotic analysis in applied mathematics and is aimed at students of pure and applied mathematics as well as science and engineering. The basic prerequisite is a background in differential equations, linear algebra, advanced calculus, and complex variables at the level of introductory undergraduate courses on these subjects."--BOOK JACKET.

COASTAL ENGINEERING 2002

PROCEEDINGS OF THE 28TH INTERNATIONAL CONFERENCE, CARDIFF, WALES, 7-12 JULY 2002

World Scientific This book contains more than 300 papers presented at the 28th International Conference on Coastal Engineering, held in Cardiff, Wales, in July 2002. It is divided into five parts: coastal waves; nearshore currents, swash, and long waves; coastal structures; sediment transport; and coastal morphology, beach nourishment, and coastal management. The papers cover a broad range of topics,

including theory, numerical and physical modeling, field measurements, case studies, design, and management. Coastal Engineering 2002 provides engineers, scientists, and planners with state-of-the-art information on coastal engineering and coastal processes.

MARITIME TECHNOLOGY AND ENGINEERING 5 VOLUME 2

PROCEEDINGS OF THE 5TH INTERNATIONAL CONFERENCE ON MARITIME TECHNOLOGY AND ENGINEERING (MARTECH 2020), NOVEMBER 16-19, 2020, LISBON, PORTUGAL

CRC Press This set of two volumes comprises the collection of the papers presented at the 5th International Conference on Maritime Technology and Engineering (MARTECH 2020) that was held in Lisbon, Portugal, from 16 to 19 November 2020. The Conference has evolved from the series of biennial national conferences in Portugal, which have become an international event, and which reflect the internationalization of the maritime sector and its activities. MARTECH 2020 is the fifth of this new series of biennial conferences. The set comprises 180 contributions that were reviewed by an International Scientific Committee. Volume 2 is dedicated to ship performance and hydrodynamics, including CFD, maneuvering, seakeeping, moorings and resistance. In addition, it includes sections on ship machinery, renewable energy, fishing and aquaculture, coastal structures, and waves and currents.

INTRODUCTION TO THZ WAVE PHOTONICS

Springer Science & Business Media Terahertz (THz) radiation, which is electromagnetic radiation in a frequency int- val from 0.3 to 10 THz (1 mm–30 ?m wavelength), is the next frontier in science and technology. This band occupies a large portion of the electromagnetic sp- trum between the infrared and microwave bands. Basic research, new initiatives, and developments in advanced sensing and imaging technology with regard to the THz band remain unexplored compared to the relatively well-developed science and technology in the microwave and optical frequencies. Historically, THz technologies were used mainly within the astronomy c- munity for studying the background of cosmic far-infrared radiation, and by the laser-fusion community for the diagnostics of plasmas. Since the ?rst demonstration of THz wave time-domain spectroscopy in the late 1980s, there has been a series of signi?cant advances (particularly in recent years) as more intense THz sources and higher sensitivity detectors provide new opportunities for understanding the basic science in the THz frequency range.

MATHEMATICAL REVIEWS

MODELING ATMOSPHERIC AND OCEANIC FLOWS

INSIGHTS FROM LABORATORY EXPERIMENTS AND NUMERICAL SIMULATIONS

John Wiley & Sons Modeling Atmospheric and Oceanic Flows: Insights from Laboratory Experiments and Numerical Simulations provides a broad overview of recent progress in using laboratory experiments and numerical simulations to model atmospheric and oceanic fluid motions. This volume not only surveys novel research topics in laboratory experimentation, but also highlights recent developments in the corresponding computational simulations. As computing power grows exponentially and better numerical codes are developed, the interplay between numerical simulations and laboratory experiments is gaining paramount importance within the scientific community. The lessons learnt from the laboratory–model comparisons in this volume will act as a source of inspiration for the next generation of experiments and simulations. Volume highlights include: Topics pertaining to atmospheric science, climate physics, physical oceanography, marine geology and geophysics Overview of the most advanced experimental and computational research in geophysics Recent developments in numerical simulations of atmospheric and oceanic fluid motion Unique comparative analysis of the experimental and numerical approaches to modeling fluid flow Modeling Atmospheric and Oceanic Flows will be a valuable resource for graduate students, researchers, and professionals in the fields of geophysics, atmospheric sciences, oceanography, climate science, hydrology, and experimental geosciences.

NUCLEAR SCIENCE ABSTRACTS

TRANSITIONAL AND TURBULENT COMPRESSIBLE FLOWS

PRESENTED AT THE FLUIDS ENGINEERING CONFERENCE

TRANSITIONAL AND TURBULENT COMPRESSIBLE FLOWS, 1995

PRESENTED AT THE 1995 ASME/JSME FLUIDS ENGINEERING AND LASER ANEMOMETRY CONFERENCE AND EXHIBITION, AUGUST 13-18, 1995, HILTON HEAD, SOUTH CAROLINA

OPTICAL ENGINEERING

THE JOURNAL OF THE SOCIETY OF PHOTO-OPTICAL INSTRUMENTATION ENGINEERS

Publishes papers reporting on research and development in optical science and engineering and the practical applications of known optical science, engineering, and technology.

ENERGY RESEARCH ABSTRACTS

Semiannual, with semiannual and annual indexes. References to all scientific and technical literature coming from DOE, its laboratories, energy centers, and contractors. Includes all works deriving from DOE, other related government-sponsored information, and foreign nonnuclear information. Arranged under 39 categories, e.g., Biomedical sciences, basic studies; Biomedical sciences, applied

studies; Health and safety; and Fusion energy. Entry gives bibliographical information and abstract. Corporate, author, subject, report number indexes.

MILLIMETER-WAVE GYROTRON TRAVELING-WAVE TUBE AMPLIFIERS

Springer A gyrotron traveling-wave amplifier (gyro-TWT) with the high-power and broad-band capabilities is considered as a turn-on key for next generation high-resolution radar. The book presents the most advanced theory, methods and physics in a gyro-TWT. The most challenging problem of instability competition has been for the first time addressed in a focused and systematic way and reported via concise states and vivid pictures. The book is likely to meet the interest of researchers and engineers in radar and microwave technology, who would like to study the gyro-TWTs and to promote its application in millimeter-wave radars. Chao-Hai Du and Pu-Kun Liu are both professors at Peking University.

A COMPUTATIONAL FRAMEWORK BASED ON AN EMBEDDED BOUNDARY METHOD FOR NONLINEAR MULTI-PHASE FLUID-STRUCTURE INTERACTIONS

Nonlinear fluid-structure interaction (FSI) is a dominating feature in many important engineering applications. Examples include underwater implosions, pipeline explosions, flapping wings for micro aerial vehicles, and shock wave lithotripsy. Due to the inherent nonlinearity and system complexity, such problems have not been thoroughly analyzed, which greatly hinders the advance of related engineering fields. This thesis focuses on the development, verification, and validation of a fluid-structure coupled computational framework for the solution of nonlinear multi-phase FSI problems involving high compressions and shock waves, large structural displacements and deformations, self-contact, and possibly the initiation and propagation of cracks in the structure. First, an embedded boundary method for solving 3D multi-phase compressible inviscid flows on arbitrary (i.e. structured and unstructured) non body-conforming CFD grids is presented. Key components include: (1) robust and efficient computational algorithms for tracking open, closed, and cracking fluid-structure interfaces with respect to the fixed, non body-conforming CFD grid; (2) a numerical algorithm based on the exact solution of local, one-dimensional fluid-structure Riemann problems to enforce the no-interpenetration transmission condition at the fluid-structure interface; and (3) two consistent and conservative algorithms for enforcing the equilibrium transmission condition at the same interface. Next, the multi-phase compressible flow solver equipped with the aforementioned embedded boundary method is carefully coupled with an extended finite element method (XFEM) based structure solver, using a partitioned procedure and provably second-order explicit-explicit and implicit-explicit time-integrators. In particular, the interface tracking algorithms in the embedded boundary method are adapted to tracking embedded discrete interfaces with phantom elements and carrying implicitly represented cracks. Finally, the resulting fluid-structure coupled computational framework is applied to the solution of several challenging FSI problems in the fields of aeronautics, underwater implosions and explosions, and pipeline explosions to assess its performance. In particular, two laboratory

experiments are considered for validation purpose: the first one concerns the implosive collapse of an air-filled aluminum cylinder; the second one studies the dynamic fracture of pre-flawed aluminum pipes driven by detonation waves. In both cases, the numerical simulation correctly reproduces in a quantitative sense the important features in the experiment.

NONLINEAR HYPERBOLIC PROBLEMS: THEORETICAL, APPLIED, AND COMPUTATIONAL ASPECTS

PROCEEDINGS OF THE FOURTH INTERNATIONAL CONFERENCE ON HYPERBOLIC PROBLEMS, TAORMINA, ITALY, APRIL 3 TO 8, 1992

Notes on Numerical Fluid Mechanics and Multidisciplinary Design This book contains original papers presented at the Fourth International Conference on Hyperbolic Problems which was held on April 3-8, 1992 in Taormina (Sicily), Italy. The aim of the Conferences in this cycle is to bring together scientists with interest in theo retical, applied and computational aspects of hyperbolic partial differential equations. The contributions, well balanced among these three aspects, deal with: mathematical theory of wave propagation, kinetic theory, existence, uniqueness and stabil ity of solutions, mathematical modeling of physical phenomena, stability and convergence of numerical schemes, multidimensional computational applications, etc. The papers are printed in the authors' alphabetic order following the idea both of mixing together topics of interest to different areas and of considering either theoretical results connected with applied problems or new applications with an essential mathemat ical approach. The Proceedings from the previous Conferences held in St. Etienne (1986), Aachen (1988) and Uppsala (1990) appeared respectively as: • Lecture Notes in Mathematics, 1270, P. Carasso, P. A. Raviart & D. Serre (Eds.), Springer-Verlag (1987) • Notes on Numerical Fluid Mechanics, 24, J. Ballmann & R. Jeltsch (Eds.), Vieweg (1989) • Third International Conference on Hyperbolic Problems, B. Engquist & B. Gustafs son (Eds.), Vol. I, II, Studentlitteratur, Uppsala University (1991). The organizers and the editors of the Conference would like to thank the Scientific Committee for the generous support, for suggesting the invited lectures, and for selecting the contributed papers.

OPTICAL TECHNIQUES IN FLUID, THERMAL AND COMBUSTION FLOW

HYDRAULIC RESEARCH IN THE UNITED STATES AND CANADA, 1976

HYDRAULIC RESEARCH IN THE UNITED STATES AND CANADA

HYPERBOLIC SYSTEMS OF CONSERVATION LAWS

THE THEORY OF CLASSICAL AND NONCLASSICAL SHOCK WAVES

Springer Science & Business Media This book examines the well-posedness theory for nonlinear hyperbolic systems of conservation laws, recently completed by the author together with his collaborators. It covers the existence, uniqueness, and continuous dependence of classical entropy solutions. It also introduces the reader

to the developing theory of nonclassical (undercompressive) entropy solutions. The systems of partial differential equations under consideration arise in many areas of continuum physics.

MONTHLY CATALOG OF UNITED STATES GOVERNMENT PUBLICATIONS

SPE JOURNAL

MAGNETOHYDRODYNAMICS POWER GENERATION AND THEORY

A BIBLIOGRAPHY

SUSTAINABLE HYDRAULICS IN THE ERA OF GLOBAL CHANGE

PROCEEDINGS OF THE 4TH IAHR EUROPE CONGRESS (LIEGE, BELGIUM, 27-29 JULY 2016)

CRC Press In an increasingly urbanized world, water systems must be designed and operated according to innovative standards in terms of climate adaptation, resource efficiency, sustainability and resilience. This grand challenge triggers unprecedented questions for hydro-environment research and engineering. Shifts in paradigms are urgently needed in the way we view (circular) water systems, water as a renewable energy (production and storage), risk management of floods, storms, sea level rise and droughts, as well as their consequences on water quality, morphodynamics (e.g., reservoir sedimentation, scour, sustainability of deltas) and the environment. Addressing these issues requires a deep understanding of basic processes in fluid mechanics, heat and mass transfer, surface and groundwater flow, among others.

SYMPOSIUM ON TURBULENT SHEAR FLOWS

PROCEEDINGS OF THE 5TH JOINT ASME/JSME FLUIDS ENGINEERING [DIVISION] SUMMER CONFERENCE--2007: (PARTS A AND B) SYMPOSIA

American Society of Mechanical Engineers A printed collection of 234 full-length, peer-reviewed technical papers. It includes topics such as 10th International Symposium on Gas-Liquid Two-Phase Flows; 10th International Symposium on Liquid-Solid Flows; 11th International Symposium on Gas-Particle Flows; and 12th Symposium on Algorithmic Developments in CFD.

THEORY AND APPLICATIONS OF OCEAN SURFACE WAVES: NONLINEAR ASPECTS

World Scientific This book is an expanded version of The Applied Dynamics of Ocean Surface Waves. It presents theoretical topics on ocean wave dynamics, including basic principles and applications in coastal and offshore engineering as well as coastal oceanography. Advanced analytical and numerical techniques are applied, such as singular perturbations. In this expanded edition, two chapters on recent developments have been added: one is on multiple scattering by periodic or

random bathymetry, and the other is on Zakharov's theory of broad spectrum wave fields. New sections include topics on infragravity waves, upstream solitons, Venice storm gates, etc. In addition, there are many new exercises. Theory and Applications of Ocean Surface Waves will be invaluable for graduate students and researchers in coastal and ocean engineering, geophysical fluid dynamicists interested in water waves, and theoretical scientists and applied mathematicians wishing to develop new techniques for challenging problems or to apply techniques existing elsewhere.

MULTI-SCALE INTERACTION OF DRIFTWAVE TURBULENCE WITH LARGE SCALE SHEAR FLOWS

Multi-scale methods are utilized within the context of strongly magnetized plasmas to describe the interaction of drift wave turbulence with large scale flow structures. The specific contexts treated correspond to transport barrier formation, magnetic island evolution in the presence of drift wave turbulence, and plasma rotation. Emphasis is placed on identifying critical feedback mechanisms via the study of simple, reduced models, rather than the detailed description of isolated components of the system. In Chapter 2 a two component self-consistent model is derived to investigate a novel mechanism of transport barrier formation. It is found that intense cellular flow, driven by modulational instability of the background turbulence provides a viable candidate mechanism for triggering transport barrier formation in regimes of weak magnetic shear. Similarly, the nonlinear modification of the drift wave phase space topology by the cellular flow is investigated. The presence of a weak non-integrable perturbation in the effective Hamiltonian of the drift wave turbulence, induced by the non-axisymmetric component of the cellular flow, is found to circumvent nonlinear wave trapping as a means of quenching the secondary instability drive of the large scale flow. In Chapter 3, the interaction of a tearing mode with drift wave turbulence is discussed. Wave kinetics and adiabatic theory are utilized to treat the feedback of tearing mode flows on the drift wave turbulence. The stresses exerted by the self-consistently evolved drift wave population density on the tearing mode are calculated by mean field methods. The principal effect of the drift waves is to pump the resonant low-m mode via a negative viscosity, consistent with the classical notion of an inverse cascade in quasi 2-D turbulence. In Chapter 4, the multi-scale methods utilized above are extended to describe the transport of parallel momentum. The primarily fluid description employed above is extended to include momentum exchange between waves and resonant particles. A quasi-linear momentum conservation theorem is proven, demonstrating that the total momentum flux can be decomposed into wave and resonant particle fluxes. Quasi-linear expressions for the radial transport of parallel momentum induced both by waves and resonant particles are derived, providing a comprehensive quasi-linear description of parallel momentum transport induced by electrostatic drift wave turbulence.

SIXTH INTERNATIONAL CONFERENCE ON NONLINEAR MECHANICS (ICNM-6)

DEStech Publications, Inc Novel mathematical and modeling approaches to problems in graded materials, biological materials, fluid mechanics and more Covers nanomechanics, multi-scale modeling, interface mechanics and microstructure This series volume contains 128 not previously published research presentations on using nonlinear mechanics to understand and model a wide variety of materials, including polymers, metals and composites, as well as subcellular and cellular tissues. Focus is on numerical and physics approaches to representing multiscale relationships within complex solids and fluids systems, with applications in materials science, energy storage, medical diagnostics and treatment, and biotechnology. TABLE OF CONTENTS Preface Committees SESSION 1: INVITED LECTURES Micro-Macro Analysis of Creep and Damage Behavior of Multi-Pass Welds Some New Developments in Non-Linear Solid Mechanics Design of Material Systems: Mathematics and Physics of the Archetype-Genome Exemplar Criticism of Generally Accepted Fundamentals and Methodologies of Traffic and Transportation Theory SESSION 2: NONLINEAR CONTINUUM MECHANICS Geometrically Nonlinear Analysis of Simple Plane Frames of Functionally Graded Materials Thermal Post-Buckling of FG Circular Plates Under Transversely Point-Space Constraint Tunability of Longitudinal Wave Band Gap in One Dimensional Magneto-Elastic Phononic Crystal Teaching Nonlinear Mechanics at the Undergraduate and Graduate Level—Two Examples Geometrically Nonlinear FE Instability Simulations of Hinged Composite Laminated Cylindrical Shells Constitutive Relation of Martensitic Transformation in CuAlNi Based on Atomistic Simulations Soft Behaviors of Beam Shaped Liquid Crystal Elastomers Under Light Actuations XFEM Based Discontinuity Simulation for Saturated Soil Numerical Algorithm of Solving the Problem of Large Elastic-Plastic Deformation by FEM Finite Deformation for Everted Compressible Hypereleastic Cylindrical Tubes Modelling and Non-Linear Free Vibrations of Cable-Stayed Beam Wavelet Solution of a Class of Nonlinear Boundary Value Problems Axial Compression of a Rectangular Rubber Ring Composed of an Incompressible Mooney-Rivlin Material Influence of Concentration-Dependent Elastic Modulus and Charge or Discharge Rate on Tensile Stress in Anode An Integral Equation Approach to the Fully Nonlinear Fluid Flow Problem in an Infinite Channel Over Arbitrary Bottom Topography Analysis of Nonlinear Dynamical Characteristics for Thermoelastic Half-Plane with Voids Tensor Model for Dynamic Damage of Ductile Metals Over a Wide Range of Strain Rates SESSION 3: MULTI-SCALE MECHANICS AND MULTI-PHYSICS MODELING The Nonlinear Magnetoelectric Effect of Layered Magnetoelectric Composite Cylinder with an Imperfect Interface A Solution for Nonlinear Poisson-Neumann Problem of Nb3Sn Superconducting Transport Current Temperature Effect on the Tensile Mechanical Properties of Graphene Nanoribbons Square Inclusion with a Nonlinear Eigenstrain in an Anisotropic Piezoelectric Full Plane Nonlinear Analysis of the Threaded Connection with Three-Dimensional Finite Element Model Effects of Particle Volume Fraction on the Macro-Thermo-Mechanical Behaviors in Plate-Type Dispersion Nuclear Fuel Elements Mechanics of Semiflexible Polymer Chains Under Confinements Study on the Solution of Reynolds Equation for Micro Gas Bearings Using the Alternating-Direction Implication Algorithm Atomistic Study of Li Concentration Dependence of the Mechanical Properties of Graphite Anode in Li-ion Battery 3D Extrusion Simulation of the Single Screw Head and Optimization Design Buckling Behavior of Defective Carbon Nanotubes Elastic

Properties of Single-Stranded DNA Biofilm with Strong Interactions Analysis on Thickness Dependence of Jc Caused by Dislocations and Grain Boundaries in YBCO Superconducting Films Operating Strain Response in CICC Coils Through Nonlinear Finite Element Modeling Dynamics Analysis of a Multi-Degree-of-Freedom Electro-Hydraulic Mix-Drive Motion Simulator by KANE Equation Multiscale 3D Fracture Simulation Integrating Tomographic Characterization Research into Compressive Mechanical Properties of Special Piezomagnetic Material Sheets A Numerical Study on Detonation Wave Propagation Using High-Precision and High-Resolution Schemes SESSION 4: STRUCTURAL DYNAMIC AND STRUCTURE-FLUID INTERACTIONS A Study on Pure IL VIV of a Marine Riser in Shear Current Parametric Studies on Nonlinear Flutter of High-Aspect-Ratio Flexible Wings Model Reduction of a Flexible Beam Rotating at High Speed Considering Dynamic Stiffening Vibration Modal Analysis of Cantilever Beams with Complicated Elasticity Boundary Constraint Numerical Simulation of Ahmed Model in Consideration of the FSI Effect Aerodynamic Damping of a Hammerhead Launch Vehicle in Transonic Flow Symmetry Reductions and Explicit Solutions of (3 + 1)-Dimensional Kadomtsev-Petviashvili (KP) Equation Nonlinear Behaviors of an Isotropic Incompressible Hyperelastic Spherical Membrane Under Different Dynamic Loads Creep Buckling of Viscoelastic Plate Consdering Higher Order Modes SESSION 5: COMPLEX FLUID FLOW AND NONLINEAR STABILITY Homotopy Analysis of Korteweg-de Vries Equation with Time Delay Homotopy Analysis Method for Bubble Pulsation Equation with Nonlinear Term of Fractional Power Chebyshev Finite Spectral Method for Boussinesq-Type Equations on Staggered Grids Twin Jets in Crossflow Application of Fixed Point Method to Obtain a Semi-Analytical Solution of Stagnation Flow On the Nonlinear Stability of Laminar Flow Between Parallel Planes Boundary Treatments in Lattice Boltzmann Method A Lattice Boltzmann Based Immersed Boundary Method for Fluid-Structure Interaction Numerical Solutions of Convection-Diffusion Equations by Hybrid Discontinuous Galerkin Methods Steady-State Solutions of the Wave-Bottom Resonant Interaction Lattice Boltzmann Simulation of the Shock Damping and the Shock Increased by Means of Lorentz Force Analysis of the Effects of Nonlinear Characteristics of Lag Dampers on Helicopter Ground Resonance Flow Structures and Sound Radiation in Supersonic Mixing Layers with Nonlinear PSE Method Turbulent Structures in Subsonic Jet Flow Forced by Random Disturbances Exponential p-Stability for a Delayed Recurrent Neural Networks with Impulses Spatial Variation of Scaling Exponents for Structure Functions in a Decaying Turbulence SESSION 6: NONLINEAR DYNAMIC OF STRUCTURE Analysis of Chaos Behavior of Single Mode Vibration of Cable-Stayed Chaotification of Fractional Maps Nonlinear Finite Element Analysis of the Dynamic Axial Crushing of Empty Hexagonal Tube Active Control of a Nonlinear Aeroelastic System Using the Receptance Method Dynamics Analysis of the FHN Neuronal Model Analyzing the Effect of the Axial Force to the Natural Frequencies of Arch Stable Periodic Response of One-Way Clutches in a Two-Pulley Belt-Drive Model Supercritical Nonlinear Dynamics of an Axially Moving Viscoelastic Beam with Speed Fluctuation Nonlinear Dynamic Response to a Moving Force of Timoshenko Beams Resting on Pasternak Foundations An Improved Method for the Construction of Nonlinear Operator in Homotopy Analysis Method A Nonlinear Integration Scheme for Evolutionary Differential Equations A Comparative Study of Civil Aircraft

Crashworthiness with Different Ground Conditions Improved Dynamic Analysis of Development of Pulmonary Edema The Timescale Function Method for Solving Free Vibration of Nonlinear Oscillator Nonlinear Aeroelastic Analysis of Flexible Wings with High-Aspect-Ratio Considering Large Deflection Differential Quadrature Method for Vibration Analysis of Finite Beams on Nonlinear Viscoelastic Foundations Numerical Simulation on the Strength and Sealing Performance for High-Pressure Isolating Flange Nonlinear Dynamical Stability of the Lattices with Initial Material and Geometric Imperfection Nonlinear Vibration of Symmetric Angle-Ply Laminated Piezoelectric Plates with Linearly Varying Thickness An Exact Free Vibration Frequency Formula for Oscillator with Single-Term Positive-Power Restoring Force An Exact Solution of Synchronization State for a Class of Networked Mass-Spring-Damper Oscillator Systems SESSION 7: INTERFACE MECHANICS AND ENGINEERING APPLICATION Numerical Simulation of Free Surface Collapse in Propellant Tank Restudy on the Adaptive Mesh Technique for Seepage Problems High-Order Series Solutions of Wave and Current Interactions Deformation and Stress Distribution of Arterial Walls of the Aged A p53-Mdm2 Dynamical Model Induced by Laminar Shear Stress in Endothelial Cells Optimized Image Processing Based on CUDA in a Combined Measurement Technique of PIV and Shadowgraph 3D Visualization of the Flow Fields Using Digital In-Line Holography Analysis and Experimental Study on Air Foam Flooding Seepage Flow Mechanics Experimental Measurements for Mechanical and Electrical Conductive Properties of CNT Bundles Analysis on Dynamic Response of Bedding Rock Slope with Bolts under Earthquakes Numerical Prediction of Aerodynamic Noise Radiated from High Speed Train Pantograph Effects of Length on Aerodynamics of High Speed Train Models Free Convection Nanofluid Flow in the Stagnation-Point Region of a Three Dimensional Body Vertical Distribution and Dynamic Release Characteristics of Pollutants from Resuspended Sediment Numerical Simulation of the Contaminant Release Through the Sediment-Overlying Water Interface Analysis on the Aerodynamic and Aero-Noise of MIRA Model Radial Squeeze Force of MR Fluid Between Two Cylinders Nonlinear Buckling Analysis and Ultimate Extended Capacity Research of Downhole Pipe Strings in Ultra-Deep Horizontal Wells A Novel Method of Generating Nonlinear Internal Wave in a Stratified Fluid Tank and Its Theoretical Model SESSION 8: MINI-SYMPOSIUM ON TRAFFIC FLUID Study on Correlation Analysis of Synchronized Flow in the Kerner-Klenov-Wolf Cellular Automation Model Numerical Simulation of Traffic Flow in the Rain or Snow Weather Condition First Order Phase Transitions in the Brake Light Cellular Automation Model Within the Fundamental Diagram Approach The Leader-Follower Winding Behavior of Pedestrians in a Queue Effect of Overpasses in Two-Dimensional Traffic Flow Model with Random Update Rule Analysis of the Density Wave in a New Continuum Model The Phenomenon of High-Speed-Car-Following on Chinese Highways A Lattice Hydrodynamic Model Considering the Difference of Density and its Analysis Experimental Feature of Car-Following Behaviors in a Platoon of 25 Vehicles Car-Following Model for Manual Transmission Vehicles The Mechanism of Synchronized Flow in Traffic Flow Modeling An Asymmetric Stochastic Car-Following Model Based on Extended Tau Theory A Gaussian Distribution Based Dual-Cognition Driver Behavior Model at Cross Traffic A New Traffic Kinetic Model Considering Potential Influence The Effect of Marks on the Pedestrian Evacuation

Equilibrium Velocity Distribution Function for Traffic Flow Effects of Antilock Braking System on Driving Behavior Under Emergent Stability Analysis of Pedestrian Flow in Two-Dimensional Optimal Velocity Model with Asymmetric Interaction Simulation-Based Stability Analysis of Car-Following Models Under Heterogeneous Traffic Crossing Speed of Pedestrian at an Unsignalized Intersection Modeling Mixed Traffic Flow at a Crosswalk with Push Button Effects of Game Strategy Update on Pedestrian Evacuation in a Hall Study on Long-Term Correlation of CO and CO2 from Vehicle Emissions on Roadsides with the Detrended Fluctuation Analysis Method Bottleneck Effect on a Bidirectional Two-Lane Mixed Traffic Flow

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