

Monday August 7, 2000

17:00 - 19:00 **Registration**

Tuesday August 8, 2000

8:00 - 8:10 Opening Remarks
A. Guran
Institute of Structronics and Mechatronics

8:10 – 8:30 Briefing of AMAM
H. Kimura
University of Electro-Communications

Keynote Speech I

8:30 - 9:10 Neuronal Mechanisms for the Adaptive Control of Locomotion in the Cat
T. Drew
University of Montreal

Keynote Speech II

9:10 - 9:50 Nonlinear Dynamics of the Human Motor Control - Real-Time and Anticipatory Adaptation of Locomotion and Development of Movements
G. Taga
University of Tokyo

Session TuA–I : Visual Adaptation Mechanisms of Systems in Locomotion

Chairs: *T. Drew*¹ and *A.E. Patla*²
¹University of Montreal
²University of Waterloo

9:50 - 10:20 Local Path Planning during Human Locomotion over Irregular Terrain
A.E. Patla, E. Niechwiej and L. Santos
University of Waterloo

10:20 - 10:30 BREAK

10:30-10:50 Emergence of Quadruped Walk by a Combination of Reflexes
K. Hosoda, T. Miyashita and M. Asada
Osaka University

10:50 – 11:10 A Model of Visually Triggered Gait Adaptation
M.A. Lewis and L.S. Simo
Iguana Robotics

Session TuA-II: Neuro-Mechanics

Chairs: *G. Taga*¹ and *H. Witte*²
¹University of Tokyo
²Friedrich-Schiller-Universität Jena

11:10 - 11:40 Biologically Inspired Dynamic Walking of a Quadruped on Irregular Terrain - Adaptation at Spinal Cord and Brain Stem
H. Kimura and Y. Fukuoka
University of Electro-Communications

11:40 - 12:00 Adaptive Posture Control of a Four-Legged Walking Machine Using Some Principles of Mammalian Locomotion
*W. Ilg*¹, *J. Albiez*¹, *H. Witte*² and *R. Dillmann*¹
¹Forschungszentrum Informatik Karlsruhe
² Friedrich-Schiller-Universität Jena

12:00 - 12:20 Stabilization of Periodic Motions - from Juggling to Bipedal Walking -
*S. Miyakoshi*¹, *G. Taga*² and *Y. Kuniyoshi*¹
¹Electrotechnical Laboratory
²University of Tokyo

12:20 - 12:40 Synchronized Robot Drumming by Neural Oscillators
*S. Kotosaka*¹ and *S. Schaal*²
¹Kawato Dynamic Brain Project(ERATO/JST)
²University of Southern California

12:40 - 13:40 LUNCH

Keynote Speech III

13:40 - 14:20 Control of Mechanical Systems Subject to Impact: Some Case Studies
A. Tornambe
Politecnico di Torino

Session TuP-I: Control of Mechanical Structures in Presence of Friction and Impact

Chairs: *A. Guran*¹ and *A. Tornambe*²
¹Institute of Structronics and Mechatronics
²Politecnico di Torino

14:20 - 14:40 Experimental Evaluation of an Active Friction Joint
L. Gaul and R. Nitsche
University of Stuttgart

14:40 - 15:00 Representation of Generalized Solutions for Controllable Dynamic Systems with Unilateral Constraints
B.M. Miller
Russian Academy of Sciences

15:00 - 15:20 Tracking of Admissible Trajectories for a Rocking Block
L. Meinini and A. Tornambe
Politecnico di Torino

15:20 - 15:30 BREAK

Session: TuP-II: Design of Neural Controller

Chairs: *A.J. Ijspeert¹ and A. Ishiguro²*
¹University of Southern California
²Nagoya University

15:30 - 16:00 A Neuromechanical Investigation of Salamander Locomotion
A.J. Ijspeert
University of Southern California

16:00 - 16:20 Evolutionary Creation of an Adaptive Controller for a Legged-Robot:
A Dynamically-Rearranging Neural Network Approach
*A. Fujii¹, A. Ishiguro¹, K. Otsu¹, Y. Uchikawa¹, T. Aoki² and
P. Eggenberger³*
¹Nagoya University
²Nagoya Municipal Industrial Research Institute
³ATR

16:20 - 16:40 On Nonlinear Dynamics that Generates Rhythmic Motion with Specific
Accuracy
K. Senda and T. Tanaka
Osaka Prefecture University

Session TuP-III: Design and Optimization Techniques in Non-Smooth Mechanics

Chairs: *R. Jones¹ and J. Bajkowski²*
¹Sandia National Laboratories
²Warsaw University of Technology

16:40 - 17:00 Energy Conversion Between Stator and Rotor in Travelling Wave
Ultrasonic Motors
H. Storck
Heinz Nixdorf Institut

17:00 - 17:20 Design of an Output Feedback Control law for a Mechanical System
Subject to Impact Insensitivity
M. Indri and A. Tornambe
Politecnico di Torino

17:20 - 17:40 Formulation on Nonsmooth Variational Problem in Mechanics
J. Bajkowski and W. Grzesikiewicz
Warsaw University of Technology

17:40 - 18:00 A Time Stepping Algorithm with a Compact Linear Complementarity
Formulation for Planar Friction Problems
K. Funk, A. Stiegelemyer and F. Pfeiffer
TU Munchen

- 18:00 - 18:20 A Yield Limited Lagrange Multiplier Formulation for 3D frictional Contact
R. Jones
Sandia National Laboratories
- 18:20 - 18:40 New Phenomena in Dynamics of the Oscillator with Soft Impacts in Comparison with Dynamics of Usual Impact Oscillator
F. Peterka
Academy of Sciences of the Czech Republic
- 18:40 - 19:00 Mathematical Description of Fuctional Dissipation of Energy in Mechanical Systems
J. Bajkowski and W. Grzesikiewicz
Warsaw University of Technology

Wednesday August 9, 2000

Keynote Speech IV

8:30 - 9:10 Sensorimotor Integration in Lampreys and Robot I: CPG Principles
A.H. Cohen¹ and M.A. Lewis²
¹University of Maryland
²Iguana Robotics

Session WeA-I: Adaptive Locomotion

Chairs: *A.H. Cohen¹ and M.A. Lewis²*
¹University of Maryland
²Iguana Robotics

9:10 - 9:40 Sensorimotor Integration in Lampreys and Robots II: CPG Hardware
Circuit for Controlling a Running Robotic Leg
M.A. Lewis¹, R.E. Cummings², M. Hartmann³ and A.H. Cohen⁴
¹Iguana Robotics
²Johns Hopkins University
³California Institute of Technology
⁴University of Maryland

9:40 - 10:00 Decentralized Autonomous Control of a Quadruped Locomotion Robot
K. Tsujita, K. Tsuchiya and A. Onat
Kyoto University

10:00 - 10:20 Controlling One-Legged Three-Dimensional Hopping Movement
K.D. Maier, V. Glauche, R. Blickhan and C. Beckstein
Friedrich-Schiller University

10:20 - 10:30 BREAK

10:30 - 10:50 Control of Walking Machines With Artificial Reflexes
M. Guddat and M. Frik
Gerhard-Mercator University

10:50 - 11:10 Novel Gaits for a Novel Crawling/Grasping Mechanism
R. M. Voyles
University of Minnesota

Session WeA-II: Modeling and Analysis of Motion

Chairs: *M. Garcia¹ and H. Kimura²*
¹University of California
²University of Electro-Communications

11:10 - 11:40 Damping And Size: Insights And Biological Inspiration
M. Garcia¹, A. Kuo², A. Peattie³, P. Wang¹ and R. Full¹
¹University of California
²University of Michigan
³Lewis and Clark College

11:40 - 12:00 Approximate Solutions for Gait Simulation and Control
P. Bourassa, M-R. Meier, P. Micheau and P. Buaka
University of Sherbrooke

12:00 - 12:20 Energy Optimal Trajectory Planning of Biped Walking Motion
R. Liu and K. Ono
Tokyo institute of Technology

12:20 - 12:40 Biped Humanoid Robots in Human Environments:
Adaptability and Emotion
H. Lim¹ and A. Takanishi²
¹Kanagawa Institute of Technology
²Waseda University

12:40 - 13:40 LUNCH

Keynote Speech V

13:40 - 14:20 Science and Technology Issues and Future Research Directions of
Active Noise and Vibration Control
Kam Ng
Office of Naval Research

Session WeP-I: Active Vibration and Noise Control

Co-chairs: *A. Guran¹ and K. Ng²*
¹Institute of Structronics and Mechatronics
²Office of Naval Research

14:20 - 14:40 Advanced Vibration Mounts for Enhanced Noise Control
J.H. Su
Naval Surface Warfare Center

14:40 - 15:00 Active Control of Wave Propagation in Periodic Fluid Loaded Shells
M. Ruzzene¹ and A. Baz²
¹The Catholic University of America
²University of Maryland

15:00 - 15:20 A Wavelet-Based Technique for Bearing Diagnostics
X. Lou¹, K.A. Loparo¹, F.M. Discenzo², J. Yoo³ and A. Twarowski³
¹Case Western Reserve University
²Rockwell Automation
³Rockwell Science Center

15:20 - 15:30 BREAK

Session WeP-II: Modelling, Constitutive Equations, and Contact Laws

- 15:30 - 15:50 Collisions of Force Response Rigid Bodies with Infinite Friction and Zero Internal Dissipation
D.D. Quinn¹ and A. Chatterjee²
¹University of Akron
²Penn State University
- 15:50 - 16:10 Surface Models for Contact Laws
K. Willner
University of Stuttgart
- 16:10 - 16:30 Unstable Neck Formation in Tensile Bars during high-rate Tension
N.J. Sorensen and K. Nilsson
University of Lund
- 16:30 - 16:50 Some Remark on Viscoelastic Contact
N. Aksel
University of Bayreuth
- 16:50-17:10 Revisiting Restitution Rules of Percussive Dynamics
J.A. Battle
Polytechnical University of Catalunya

Session WeP-III: Experiments and Simulations in Nonsmooth Mechanics

- 17:10 - 17:30 Modelling, Simulation and Testing of Friction Phenomena on the Contact Surface of a Friction Pair, Frictional Material-Brake Disk
J. Bajkowski, W. Grzesikiewicz and M. Hac
Warsaw University of Technology
- 17:30 - 17:50 Using Proper Orthogonal Decomposition To Experimentally Monitor and Analyse the Vibro-Impact Response of a Rotor
A-A. F. Mohammed and A. Vakakis
GE Corporate R & D Center
- 17:50 - 18:10 Modeling and Simulation of a Slider Crank Mechanism Including Friction and Clearance
T. Thuemmel
Technische Universitat Munchen
- 18:10 - 18:30 Effect of Surface Forces During Normal Impact of a Rigid Sphere with an Elastic Flat - A numerical Simulation
J. Streater
Georgia Institute of Technology
- 18:30 - 18:50 Dynamic Deformation of Ceramic Faced Composite Armor under High Velocity Impact Loading
A. Haque, R.P. Mistry, H. Mafuz and S. Jeelani
Tuskegee University

Thursday August 10, 2000

Keynote Speech VI

8:30 - 9:10 Robust Behavior of the Human Leg
R. Blickhan, A. Seyfarth, H. Wagner, A. Friedrichs and M. Gunther
Friedrich-Schiller-Universität Jena

Session ThA-I: Adaptive Mechanics

Chairs: *R. Blickhan¹ and K. Ono²*
¹Friedrich-Schiller-Universität Jena
²Tokyo Institute of Technology

9:10 - 9:40 Quadrupedal Mammals as Paragons for Walking Machines
*H. Witte¹, R. Hackert¹, W. Ilg², J. Biltzinger¹, N. Schilling¹,
F. Biedermann¹, M. Jergas³, H. Preuschoft³ and M.S. Fischer¹*
¹Friedrich-Schiller-Universität Jena,
²Forschungszentrum Informatik
³Ruhr-Universität Bochum

9:40-10:10 Some Issues in Creating 'Invertebrate' Robots
I.D. Walker
Clemson University

10:10-10:30 BREAK

10:30-10:50 An Adaptive Controller for Two Cooperating Flexible Manipulators
C.J. Damaren
University of Toronto

10:50 - 11:10 Spontaneous Generation of Anti-Gravitational Arm Motion Based on Anatomical Constraints of the Human Body
N. Ogihara and N. Yamazaki
Keio University

11:10 - 11:30 Interaction Between Motions of the Trunk and the Limbs and the Angle of Attack During Synchronous Gaits of the Pika (*Ochotona Rufescens*)
R. Hackert, H. Witte and M.S. Fischer
Friedrich-Schiller-Universität Jena

11:30 - 11:50 A Fluidic Actuator for Shape Control and Locomotion of Flexible Structures
A. Guran
Institute of Structronics and Mechatronics

11:50 - 12:10 Optimal Attitude Control for Articulated Body Mobile Robots
E.F. Fukushima and Shigeo Hirose
Tokyo Institute of Technology

12:10 - 13:10 LUNCH

Session ThP-I: Behavior and Motion of Humans & Humanoids

Chairs: *Ch. Lutzenberger*¹ and *S. Kawaji*²
¹Technische Universitat Munchen
²Kumamoto University

13:10 - 13:40 Analysis of Hemiparetic Gait by Using Mechanical Models
Ch. Lutzenberger and F. Pfeiffer
Technische Universitat Munchen

13:40 - 14:00 Dynamics and Control of a Simulated 3-D Humanoid Biped
K. Sari, G.M. Nelson and R.D. Quinn
Case Western Reserve University

14:00 - 14:20 Real-Time Interactive Motion Generator of Human Figures
Y. Nakamura^{1,2} and *K. Yamane*¹
¹University of Tokyo
²CREST(Japan Science and Technology Corporation)

14:20 - 14:40 Adaptive Motions by the Endocrine System Model in An Autonomous Robot
T. Ogata and S. Sugano
Waseda University

14:40 - 15:00 Biped Locomotion Control Based on Rocking Motion
*K. Ogasawara*¹, *M. Arao*² and *S. Kawaji*¹
¹Kumamoto University
²OMRON Corp.

15:00 - 15:20 Self-Excited Walking of a Biped Mechanism
K. Ono, R. Takahashi, T. Shimada and A. Imadu
Tokyo Institute of Technology

15:20 - 15:30 BREAK

Keynote Speech VII

15:30 - 16:10 Matched Asymptotic Matched Field Processing What is it?
How good is it?
Alex Tolstoy
ATolstoy Sciences

Session ThP-II: Propagation Modeling in Shallow Water

Chair: *A. Tolstoy*
ATolstoy Sciences

16:10 - 16:30 Propagation Modeling for Matched Field Inversion in Range
-dependent Shallow Water Environments

R. Chapman and M. Musil
University of Victoria

16:30 - 16:50 2D and 3D Sound Propagation in Shallow Water Waveguides

D.J. Thomson¹, G.R. Ebbeson¹ and G.H. Brooke²

¹Defence Research Establishment Atlantic

²Integrated Performance Decisions

16:30 - 16:50 Broadband Sound Propagation in Shallow Water and
Geoacoustic Inversion

D. Knobles, R.A. Koch, L.A. Thompson and K.C. Focke
The University of Texas at Austin

16:50 - 17:10 MFP Performance for a VLA in Shallow Water

G.R. Ebbeson, D.J. Thomson and G.J. Heard

Defence Research Establishment Atlantic

17:10 - 17:30 Acoustic Propagation in Bubbly and Turbid Environments

S.D. Richards¹ and T.G. Leighton²

¹Defence Evaluation and Research Agency

²University of Southampton

Session ThP-III: Dynamics & Control of Mechanical Structures in Presence of Friction and Impact

17:30 - 17:50 One of the following:

Friction During Metal Forming Processes with Taking into Account
Surface Roughness

O. Mahrenholz, N. Dontchev and R. Iankov

TU Harburg

OR

Dynamic Response of Multibody Mechanical Systems with Lubricated
Journal Bearings

B.J. Alshar and H.M. Lankarani

Wichita State University

17:50 - 18:10 Stochastic Oscillations of a one-degree-of freedom Nonlinear Oscillator
With Friction

C.H. Lamarque and T. Robert

Ecole Nationale des Travaux Publics de l'Etat

18:10 - 18:30 On the Determination of the Friction-Velocity from Experimental
Trajectories

V. D'Agostino and D. Guida

University of Salerno

- 18:30 - 18:50 Modeling the System for Automatic Compensating Dynamic Forces in Two Planes
T. Majewski
Universidad de las Americas-Puebla
- 18:50 - 19:10 Constraints Identification of a Ball Screw in a Wood Machining Center
B. Allotta, V. Colla, F. Angioli and M. Rinchi
Scuola Superiore Sant'Anna
- 19:10 - 19:30 Global Behaviour of a Nonsmooth Poincare Map in a Vibri-Impact Oscillator
O. Janin and C.H. Lamarque
Ecole Nationale des Travaux Publics de l'Etat

Friday August 11, 2000

Keynote Speech VIII

8:30 - 9:10 Dynamic Locomotion with Four and Six-Legged Robots
*M. Buehler¹, U. Saranli², D.Papadopoulos¹ and
D.Koditschek²*
¹McGill University
²University of Michigan

Session FrA-I: Technical Development of Mechanism and Control

Chairs: *M. Buehler¹ and K. Yoneda²*
¹McGill University
²Tokyo Institute of Technology

9:10 - 9:30 Partial Leg Exchange and Active CG Control of Twin-Frame
Walking Machine
K. Yoneda, Y. Ota, F. Ito and S. Hirose
Tokyo Institute of Technology

9:30 - 9:50 3D Posture Control by Using the Cat-Turn Motion
A. Miyajima, K. Yamafuji and T. Tanaka
University of Electro-Communications

9:50 - 10:10 Development of MEL HORSE
H. Takeuchi
Mechanical Engineering Laboratory

10:10 - 10:30 BREAK

Session FrA-II: Acoustic Interactions

Chairs: *H. Uberall¹ and J.W. Dickey²*
¹Catholic University of America
²The Johns Hopkins University

10:30 - 10:50 Circumferential Waves on Cylindrical Shells with Single and Double
Fluid Loading
H. Uberall¹, P.K. Raju², A.C.Ahyi², K. Bijorno³
¹Catholic University of America
²Auburn University
³Technical University of Denmark

10:50 - 11:10 TBA

11:10 - 11:30 Numerical Results for Acoustic Scattering from a Wedge
R. Hughes and J. Nimi
Office of Naval Research

11:30 - 11:50 Three Dimensional Acoustic Scattering Models for Elongated Fluid-like Zooplankton
A.C. Lavery¹, D. Chu¹, T.K. Stanton¹, D.E. McGehee²
¹Woods Hole Oceanographic Institution
²BAE Systems

11:50 - 12:10 Model Evaluation and Inversion in Laterally Varying, Shallow Water Waveguides
G.V. Frisk and K.M. Becker
Woods Hole Oceanographic

12:10 - 13:40 LUNCH

Keynote Speech IX

13:40 - 14:20 Wave Propagation in Saturated Porous Media
M. Buckingham
University of California

Session FrP-I: Advances in Acoustics and Wave Mechanics

Chairs: *H. Uberall¹ and M. Buckingham²*
¹Catholic University of America
²University of California

14:20 - 14:40 Non-Destructive Characterization of Coating Layers Using the Acoustooptic NDT-Technique
S. Vanaverbeke and O. Leroy
Katholieke Universiteit Leuven

14:40 - 15:00 Transmitter and Receiver Orientation Effects on Acoustic Measurements and Parametric Modeling
S. Vandenplas, A.b. Temsamani and L. van Biesen
Vrije Universiteit Brussel

15:00 - 15:20 Low-Frequency Acoustic Emissions of a Plunging Water Jet
T. Berger, T. Hahn and M. Buckingham
University of California

15:20 - 15:40 BREAK

Session FrP-II: Super-Mechano Systems

Chairs: *F. Matsuno¹ and R.M. Voyles²*
¹Tokyo Institute of Technology
²University of Minnesota

15:40 - 16:10 Unit Design of Hyper-Redundant Snake Robots Based on a Kinematic Model
F. Matsuno and K. Mogi
Tokyo Institute of Technology

- 16:10 - 16:30 Dynamic Manipulability of a Snake-Like Robot with Consideration of Side Force and its Application to Locomotion Control
H. Date, Y. Hoshi and M. Sampei
Tokyo Institute of Technology
- 16:30 - 16:50 Development and Running Control of a 3D Leg Robot
T. Ikeda, T. Tamura and T. Mita
Tokyo Institute of Technology
- 16:50 - 17:10 Jumping Cat Robot with Kicking a Wall
M. Yamakita, Y. Omagari and Y. Taniguchi
Tokyo Institute of Technology
- 17:10 - 17:40 Closing Remarks
H. Witte
Friedrich-Schiller-Universität Jena
- 17:40 - 18:00 Discussion
- 19:15 **Congress Banquet**

Saturday August 12, 2000

Keynote Speech X

8:30 - 9:10 New Phenomena in Dynamics of Oscillator with Soft Impacts
in Comparison with Dynamics of Usual Impact Oscillator
F. Peterka
Academy of Sciences of the Czech Republic

Session SaA-I: Nonlinear Dynamics of Impacting Oscillators

Chairs: *A. Guran¹ and F. Peterka²*
¹Institute of Structronics and Mechatronics
²Academy of Sciences of the Czech Republic

9:10 - 9:30 Dynamics of two Chaotic Oscillators Coupled by Impacts
B. Blazejczyk-Okolewska
Technical University of Lodz

9:30 - 9:50 Behaviour of Synchronous Eliminator for the Nonharmonic Excitation
T. Majewski
Universidad de las Americas-Puebla

9:50 - 10:10 Regular and Chaotic of two Impacting Oscillators
K. Czolczynski
Technical University of Lodz

10:10 - 10:20 BREAK

Session SaA-II: Linear and Nonlinear Identification

Chairs: *L. Garibaldi¹ and J. Wright²*
¹Politecnico di Torino
²University of Manchester

10:20 - 10:40 Diagnostic Significance of 2x Rev. Components in Vibration
Analysis of Rotor Systems
N. Bachschmid, P. Pennacchi and E. Tanzi
Politecnico di Milano

10:40 - 11:00 Neural vs. Conventional Identification of Hysteretic Oscillators
S. Broglio, F. Scaramelli and P. Vennini
Politecnico di Milano

11:00 - 11:20 Application of the Resonant Decay Method to the Identification of Non-
Linear Multi-Degree of Freedom Systems
J.R. Wright, M.F. Platten, J.E. Cooper and M. Sarmast
University of Manchester

11:20 - 11:40 Identification Techniques for Large Structures Based on Output-Only Data
L. Garibaldi, S. Marchesiello and E. Giorcelli
Politecnico di Torino

11:40 - 12:00 Identification by Genetic Algorithm of the Parameters of a Non-Linear Model for the Simulation of Indexing Cam Mechanisms Dynamics
R. Bussola, R. Faglia and M. Tiboni
Universita degli Studi di Brescia

12:00 - 13:00 LUNCH

Session SaP-I: Acoustic Interactions I

Chairs: *J. Dickey¹ and H. Uberall²*
¹The Johns Hopkins University
²Catholic University of America

13:00 - 13:20 Shallow Water Bottom Interactions
A. Tolstoy
ATolstoy Sciences

13:20 - 13:40 Partial-Wave Analysis of the Sound Scattering from Fluid-Filled Spherical Shells
M.F. Werby¹ and H. Uberall²
¹NRL Stennis Space Center
²Catholic University of America

13:40 - 14:00 Hot Spots - The Focusing of Transient Response in Structural Networks
J. Dickey
The Johns Hopkins University

14:00 - 14:20 A Model-Based Technique for the Detection of Bearing Faults
X. Lou¹, K.A. Loparo¹, F.M. Discenzo², J. Yoo³ and A. Twarowski³
¹Case Western Reserve University
²Rockwell Automation
³Rockwell Science Center

14:20 - 14:40 Experimental Investigation for Bounded Beam Reflection and Transmission Through Viscoelastic Materials
A. Bey Tamsamani, S. Vandenplas and L. Van Biesen
VUB Pleinlaan

Session SaP-II: Underwater Acoustics I

Chairs: *S.A. Chin-Bing*¹ and *M.R. Werby*²
¹Naval Research Laboratory
²NRL Stennis Space Center

14:40 - 15:00 A One-Way Coupled Mode Solution, Huygen's Principle and Mode Coupling Coefficients
M.F. Werby
NRL Stennis Space Center

15:00 - 15:20 Phase Space and Path Integral Methods in Classical Elliptic Wave Propagation Modeling
*P.M. Jordan*¹ and *L. Fishman*²
¹Naval Research Laboratory
²University of New Orleans

15:20 - 15:40 Evaluating the Significance of Acoustic Backscatter from Small Scale Bathymetric Features
H.A. Terrill
Naval Research Laboratory

15:40 - 16:00 SCORE: Scalable Computer Ocean Reverberation Engine
S.A. Chin-Bing, L.A. Pflug, W. Saunders and J.J. Newcomb
Naval Research Laboratory

16:00 - 16:20 Pulse Contours and the Localization of Signals in a Waveguide
*M.F. Werby*¹ and *H. Uberall*²
¹NRL Stennis Space Center
²Catholic University of America

Session SaP-III: Linear and Nonlinear Identification I

16:20 - 16:40 Applications of the Conditioned Reverse Path Method to Single and Multi-Degree-of-Freedom Non-Linear Systems
S. Marchesiello, and L. Garibaldi
Politecnico di Torino

16:40 - 17:00 An Identification Method of Nonlinear Mechanical Systems Under Random Excitation
S. Bellizzi, and M. Defilippi
Laboratoire de Mecanique et d'Acoustique

17:00 - 17:20 Application of the Real Condensation of Transfer Functions to Holographic Measurement Data
J. Piranda, E. Poltete and A. Lepage
Laboratoire de Mecanique Appliquee

17:20 - 17:40 On the Vortex Induced Vibration: Equivalent Oscillator
Parameters Identification Technique
F. Fossati¹ and F. Resta²
¹Politenico di Milano
²Universita degli Studi Di Catania

17:40 - 18:00 One of the following:
Optimal Blade Modeling of an Axial Flow Fan Under
Vibration Constraints
G. Catania and G. Naldi
Universita di Bologna

Session SaP-IV: Underwater Acoustics II

Chairs: *M.F. Werby¹ and S.A. Chin-Bing²*
¹NRL Stennis Space Center
²Naval Research Laboratory

18:00 - 18:20 Modeling Pulse Propagation in the Presence of a Rough
Sea Surface and its Associated Bubble Clouds
G.V. Norton
Naval Research Laboratory

18:20 - 18:40 Second Sound in a Spherical Shell
P.M. Jordan¹ and P. Puri²
¹Naval Research Laboratory
²Univ. of New Orleans

18:40 - 19:00 The Generalized Eigenvalue Problem and Fast Normal Mode
Solutions
M.F. Werby
NRL Stennis Space Center

19:00 - 19:20 Coupled, Dynamic Ocean and Acoustic Modeling
*S.A. Chin-Bing, D.B. King, A. Warn-Varnas and
R.A. Zingarelli*

19:20 - 19:40 Time Constrained Environmentally Adaptive Acoustic
Search Algorithm Design
J.R. Dubberley
Naval Research Laboratory