

Third European Conference on Structural Control



Conference Programme

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HOSTING:

Vienna University of Technology
Vienna, Austria

DATE:

July 12-15, 2004

History

The First European Conference on Structural Control took place in Barcelona in 1996. It has been decided to organize a European Conference on Structural Control every four years. The Second European Conference on Structural Control was held in 2000 in France at the Ecole Nationale des Ponts and Chaussees in Champs-sur-Marne, close to Paris. The present Call refers to the Third European Conference of Structural Control, which will take place at the Vienna University of Technology in 2004.

Hosting Institution

The Conference will take place at the Vienna University of Technology, which is located in the center of Vienna, the capital of Austria.

Aims and Scope

This conference aims at fostering scientific interactions among the vast community of researchers contributing to structural control in a broad sense, and at strengthening the European research and professional community of structural control. Cross-fertilization between the different scientific disciplines and interactions with professional engineers will be encouraged.

Active, passive, semi-active or hybrid control in both, linear and non-linear structural problems will be considered. As important branches of structural control, non-destructive testing, health monitoring, damage detection and life-line assessment will be addressed as well. Smart civil, mechanical and space structures interacting with their environment and undergoing various loads such as wind, earthquakes or traffic are main targets of this conference.

Steering Organization

European Association for the Control of Structures
URL: <http://dipmec.unipv.it/>

Conference Chairmen

Rainer Flesch

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Hans Irschik

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Organizing Committee

F. Ziegler (Chair): Vienna University of Technology, Institute of Rational Mechanics
F. Rammerstorfer: Vienna University of Technology, Institute of Light-Weighted Structures and Aero-Space Engineering
R. Flesch : Arsenal Research, Vienna, Austria
H. Irschik : Division of Technical Mechanics, Johannes Kepler University of Linz, Austria
H. Wenzel: Vienna Consulting Engineers VCE, Austria
G. Schatz: Linz Center of Excellence in Mechatronics (LCM)
K. Schlacher: Division of Automatic Control, Johannes Kepler University of Linz, Austria

The International Association for Structural Control (IASC) has been very helpful for the announcement of the conference.

Scientific Committee

A. Baratta : Universita di Napoli - Federico 2, Italy
A. H. Barbat : Universitat Politecnica de Catalunya, Barcelona, Spain
A. K. Belyaev: Polytechnical University of St. Petersburg, Russia
F. Casciati : Universita di Pavia, Italy
M. Fliess: Ecole Normale Supérieure de Cachan, France
U. Gabbert, University of Magdeburg, Germany
A. Del Grosso : Universita di Genova, Italy
A. G. El-Attar: Cairo University, Egypt
S. El-Borgi: Polytechnic School of Tunisia, Tunisia
P. Fajfar : University of Ljubljana, Slovenia
L. Faravelli : Universita di Pavia, Italy
C.M. Friend : Cranfield University, United Kingdom
R. Heuer : Vienna University of Technology, Austria
J. Holnicki-Szulc : Institute for fundamental technological research, Warsaw, Poland
D. Jurukovski : Institute of Earthquake Engineering and Engineering Seismology, Republic of Macedonia
A. Kovaleva : Russian Academy of Sciences, Moscow, Russia
F. Lopez Almansa : Universitat Politecnica de Catalunya, Barcelona, Spain
G. Magonette : ELSA Lab, Ispira, Italy
M. Melkumyan: American University of Armenia, Armenia
B. Palazzo : University of Salerno, Italy
A. Preumont : Université libre de Bruxelles, Belgique
F. Rammerstorfer : Vienna University of Technology, Austria
J. Rodellar : Universitat Politecnica de Catalunya, Barcelona, Spain
K. Schlacher: University of Linz, Austria
C. Symakezis : National University of Athens; Greece
F. Ziegler : Vienna University of Technology, Austria

Monday, July 12	
18:00	Start Registration
19:00	<p>Welcome Cocktail at the conference venue</p> <p>Time: 19.00 h Location: University of Technology (Conference Venue)</p> 

Tuesday, July 13					
07:30	Start Registration				
08:30-09:00	Opening Session				
09:00-09:45	Plenary Lecture 1				
09:45 - 10:15 Coffee Break					
	Room	Room	Room	Room	Room
10:15 – 11:45	1-1 Modelling, Design and Dynamic Analysis I	1-2 Active Control I	2-1 Piezoelectric Materials	6.1-1 Bridges I: Cable - Stayed Bridges	M6-1 Earthquake Mitigation via Control Algorithms - Experiment & Applications
11.45 - 13:00 Lunch					
13:00 – 14:30	1-3 Modelling, Design and Dynamic Analysis II	1-4 Active Control II	2-2 Shape Memory Alloys	5-1 Health Monitoring I	M6-2 Earthquake Mitigation via Control Algorithms - Theory
14:30 - 14:45 Break					
14:45 – 16:15	1-5 Modelling, Design and Dynamic Analysis III	1-6 Active Control III	2-3 Magneto- rheological Fluids	6.2-1 Buildings I	M2 Towards Enhancing Structural Integrity
16:15 - 16:45 Coffee Break					
16:45 – 18:15	1-7 Modelling, Design and Dynamic Analysis IV	1-8 Active Control IV	2-4 New Developments	5-2 Health Monitoring II: Bridges	M4 In-situ Assessment of Important Buildings and Infrastructure

Wednesday, July 14					
08:00	Start Registration				
09:00-09:45	Plenary Lecture 2				
09:45-10:15 Coffee Break					
	Room	Room	Room	Room	Room
10:15 – 11:45	1-9 Modelling, Design and Dynamic Analysis V	1-10 Adaptive Control and Fuzzy Algorithms		6.3-1 Different Structures I: Aerospace, Off- Shore, Ship	M1-1 Cultural Heritage Preservation (INCOMED)
11.45-13:00 Lunch					
13:00 – 14:30	1-11 Modelling, Design and Dynamic Analysis VI	1-12 Optimal Control Methods I	6.1-2 Bridges II: Control and Pedestrian Bridges	5-3 Health Monitoring III	M1-2 Cultural Heritage Preservation (INCOMED)
14:30 – 14:45 Break					
14:45 – 16:15	1-13 Modelling, Design and Dynamic Analysis VII	1-14 Optimal Control Methods II	6.2-2 Buildings II: Base Isolation	5-4 Health Monitoring IV: Concrete Structures	M3-1 Sensor Technology Toward Structural Control (S3T)
16:15 – 16:45 Coffee Break					
16:45 – 18:15	1-15 Passive Control I	3-1 Experimental Methods I	6.3-2 Different Structures II: Vehicles	5-5 Health Monitoring V	M3-2 Sensor Technology Toward Structural Control (S3T)

Thursday, July 15					
07:30	Start Registration				
08:30-09:00	Plenary Lecture 3				
09:00-09:45	Plenary Lecture 4				
09:45 - 10:15 Coffee Break					
	Room	Room	Room	Room	Room
10:15 – 11:45	1-16 Passive Control II	4-1 Assessment I	6.1-3 Bridges III	5-6 Health Monitoring VI	M5 Innovative Applications of Smart Technology
11.45 - 13:00 Lunch					
13:00 – 14:30	1-17 Passive Control III	3-2 Experimental Methods II	6.2-3 Buildings III	4-2 Buildings III	M7 The European SAMCO Network
14:30 – 14:45 Break					
14:45 – 16:15	1-18 Semi -Active Control I	4-3 Assessment III	6.3-3 Different Structures III	5-7 Different Structures III	M8 Fluid Power Actuators for Structural Control
16:15 – 16:45 Coffee Break					
16:45 – 18:15	1-19 Semi -Active Control II	3-3 Experimental Methods III: Shaking - Table - Tests	6.1-4 Bridges IV: Steel- and Railway Bridges	4-4 Assessment IV: Landslide Risk	M9 Control of Structures + Applications

Session
 Sectional Key Note
 Chair
 Lectures

Session 1-1: Modelling, Design and Dynamic Analysis I	
<i>Chair: Alexander Belyaev,</i>	<i>Co-Chair: Helmut Holl, Franz Hammelmueller</i>
Author(s)	Title
Watanabe, K.	Wave Propagation in Cylindrically Anisotropic and Inhomogeneous Elastic Solids
Indeitsev, D.; Mochalova, Y.	Dynamic Effects Accompanying Diffusional Homogenization in Thin Films
Polyansky, V.	Interaction of a low-frequency mechanical system with a high-frequency electric drive
Aero, E.	Dynamic Problems of the Nonlinear Micromechanics for Media with Irreversibly Modified Discrete Structure

Session 1-3: Modelling, Design and Dynamic Analysis II	
<i>Chair: Franz Ziegler</i>	<i>Co-Chair Helmut Holl, Franz Hammelmueller</i>
Author(s)	Title
Lerch, R.; Kaltenbacher, M.; Landes, H.	Numerical Methods in Electromechanical Coupled Field Problems
Corbi, O.; Baratta, A.	Treatment of Mechanical Non-Linearities in Dynamic Structures
Ramos, L.; Barros, R.	Non-Linear Formulation and Algorithmic Implementation of Tuned Mass Dampers
Dibold, M.; Gerstmayr, J.; Irschik, H.; Stadlmayr, R.	Dynamics of Multibody Systems Including Hydraulic Actuators and Feedback Control

Session 1-5: Modelling, Design and Dynamic Analysis III	
<i>Chair: K. Watanabe</i>	<i>Co-Chair Helmut Holl, Franz Hammelmueller</i>
Author(s)	Title
Sankhla, P.; Mehra, V.	Dynamic Analysis and Behaviour of Infilled Frames under Seismic Loading
Limongelli, M.	Response Prediction of Multi-storey Buildings Using a Spline-based Reconstructor
Uckan, E.; Erdik, M.; Mortaja, W.; Tuzun, C.; Onem, G.	Earthquake Response of a Three Story Steel Structure Seismically Isolated by FPS Type Sliding Isolation System
Wallace, M.; Wagg, D.; Neild, S.	Use of Control Techniques for Error Analysis of Real Time Dynamic Substructure Testing
Baratta, A.; Corbi, I.	Modelling of Seismic Propagation by Mechanical Patterns

Session 1-7: Modelling, Design and Dynamic Analysis IV	
<i>Chair: Agnessa Kovaleva</i>	<i>Co-Chair Helmut Holl, Franz Hammelmüller</i>
Author(s)	Title
Mofid, M.; Zarfam, P.; Raissi Fard, B.	Modal Incremental Non-linear Seismic Analysis
Rosko, P.	Dynamic Response Control of Truss Structure
Kowalewsky, O.; Knap, J.; Ortiz, M.	Complex Lattice Qasicontinuum Theory and Its Application to Ferroelectrics
Saimoto, A.; Imai, Y.; Nisitani, H.	Simulation of Compressive Fracture of Brittle Solids with Multiple Cracks
Norman, J.; Virden, D.; Crewe, A.; Wagg, D.; Severn, R.	Multiple Support Excitation of a Single Degree of Freedom Experiment: Control Methodology and Testing

Session 1-2: Active Control I	
<i>Chair: Kurt Schacher</i>	<i>Co-Chair: Rudolf Heuer, Stadtmayr</i>
Author(s)	Title
Preumont, A.	Active Damping and Active Isolation of Large Space Structures
Nestorovic-Trajkov, T.; Köppe, H.; Gabbert, U.	Active Control of Flexible Structures using Piezoelectric Actuators and Sensors with an Application to a Funnel-Shaped Structure
Wong, K.; Wang, Y.	Active Control of Seismically-Excited Inelastic Structures Based on Energy Density Spectra
Domaneschi, M.; Casciati, F.; Faravelli, L.	Active Control Schemes for Managing Nonlinear Passive Devices

Session 1-4: Active Control II	
<i>Chair: Andre Preumont</i>	<i>Co-Chair: Rudolf Heuer, Stadtmayr</i>
Author(s)	Title
Kugi, A.	Infinite-dimensional Control of Piezoelectric Structures
Scruggs, J.; Iwan, W.	Nonlinear Feedback Control Laws for Regeneratively-Actuated Structures
Gattulli, V.; Alaggio, R.	Boundary Control of Cable Oscillations by State Feedback with Observer
Eisenberg, J.; Smirnov, V.; Vasilyeva, A.	Structural Control and Seismoisolation in Russia. Recent Developments and Applications

Session 1-6: Active Control III	
<i>Chair: Ulrich Gabbert</i>	
<i>Co-Chair: Rudolf Heuer, Stadtmayr</i>	
Author(s)	Title
Collet, M. ; Monnier, P.	Definition of the Mechanical Design Parameters to Optimize Efficiency of Integral Force Feedback Active Damping Strategy
Abdelaziz, T.; Valasek, M.	Eigenstructure Assignment by Derivative-plus-Acceleration Feedback For Second-order Linear Time-Invariant Control Systems
Przychodzki, M.; Lewandowski, R.	The Application of the Acceleration Feedback in Semi-active and Active Control of Building Structures.
Luo, N.; Villamizar, R.; Vehí, J.; Rodellar, J.	Vibration Attenuation of Uncertain Structures by using Quantitative Feedback Theory
Shooshtari, M.	Parametric Investigation of Concrete Structures with Active Seismic Control

Session 1-8: Active Control IV	
<i>Chair: Andreas Kugi</i>	
<i>Co-Chair: Rudolf Heuer, Stadtmayr</i>	
Author(s)	Title
Moutinho, C.; Cunha, A.; Caetano, E.	Implementation of an Active Mass Damper For Seismic Vibration Control of a Plane Frame Physical Model
Bourquin, F.; Branchet, B.; Collet, M.	Numerical Robustness of IFF, DVF and Fast Control Algorithms with Respect to Actuator Dynamics
Adam, B.; Smith, I.	Serviceability Control of an Intelligent Tensegrity Structure
Paulet-Crainiceanu, F.; Rodellar, J.	Solution for Structural Control of a Bridge Benchmark, Phase II
Chen, Y.; Ko, C.	Dynamic Characteristic of a Propeller-Controlled ATLCD

Session 2-1: Piezoelectric Materials	
<i>Chair: Michael Krommer</i>	
<i>Co-Chair: Manfred Nader, Thomas Mrazek</i>	
Author(s)	Title
Tanigawa, Y.; Ootao, Y.	Transient Piezothermoelastic Problems of Smart Composite Structures Bonded to a Piezoelectric Layer
Zehetner, C.; Irschik, H.	Influence of Piezoelectric Actuation on the Dynamic Stability of Simply Supported Smart Beams
Arockia-Rajan, A.; Delibas, B.; Menzel, A.; Seemann, W.	Simulation of Nonlinear Behavior of Piezoceramic Materials Using Probability Functions
Pietrzakowski, M.	Vibration Control of Laminated Plates via Skewed Piezocomposite Layers

Session 2-2: Shape Memory Alloys	
<i>Chair: Y. Tanigawa</i>	<i>Co-Chair: Manfred Nader, Thomas Mrazek</i>
Author(s)	Title
Oberaigner, E.; Fischer, F.	Phase Transformation Induced Damping of Shock Waves in a Shape Memory Alloy (SMA) Rod Subjected to a High Energy Impact
Isalgue, A.; Martorell, F.; Torra, V.; Lovey, F.	Building Dampers by SMA CuAlBe: Long Time Guarantee and Conditioning Treatments
Dolce, M.; Cardone, D.; Nigro, D.; Ponzo, F.; Santarsiero, G.	In Situ Push-over Test on a Real R/C Frame Equipped with Re-entering Braces Based on Shape Memory Alloys
Soda, S.	Passive and Semi-active Origin-restoring Dampers for Seismic Response Control of Building Structures

Session 2-3: Magnetorheological Fluids	
<i>Chair: H. Friedmann</i>	<i>Co-Chair: Manfred Nader, Thomas Mrazek</i>
Author(s)	Title
Pinelli, J.; Gutierrez, H.; Harrigan, G.	Controlling Seismic Vibrations with Magneto-Rheological Tuned Mass Dampers
Carlson, J.; Yanyo, L.	Critical Considerations for Magnetorheological Fluids and Devices in Civil Engineering Structures
Weber, F.; Feltrin, G.; Motavalli, M.	Damping Performance Using Feedback Controlled MR Dampers
Cho, S.; Lee, H.; Kim, C.; Lee, I.	Smart Passive System Based on MR Damper
Colwell, S.; Basu, B.	The Orifice Damping Properties of Magnetorheological Fluids

Session 2-4: New Developments I	
<i>Chair: E. Oberaigner</i>	<i>Co-Chair: Manfred Nader, Thomas Mrazek</i>
Author(s)	Title
Friedmann, H.; Henkel, F.; Gurka, M.; Petricevic, R.	New Developments on Smart Materials with Sensor and Actuator Abilities and their Applications
Tsopelas, P.; Nerbun, D.	A Cellular Material-Base Damper for Seismic Response Reduction of Structural Systems
Brocato, M.	A New ER Damper. Theory Overview and Experiments
Zonta, D.; Zanon, P.; Pozzi, M.	Development of a FBG-based Dynamic Measurement System for the Real-time Monitoring of RC Elements: Experimental Application to a Smart Beam Specimen.

Session 6.1-1: Bridges I: Cable - Stayed Bridges	
<i>Chair:</i>	<i>Co-Chair:</i>
Author(s)	Title
Geier, R.	Condition Monitoring of Stay Cables
Marazzi, F.; Magonette, G.	Cable-stayed Bridge Control: Strategies and Implementations
Xiang, Y.; Weng, S.	Study on Cable Tension Optimization of Cable Stayed Bridge
Park, K.; Jung, H.; Oh, J.; Lee, I.	Robust Hybrid Control of a Cable-Stayed Bridge

Session 5-1: Health Monitoring I	
<i>Chair:</i>	<i>Co-Chair:</i>
Author(s)	Title
Aktan, E.; Grimmelman, K.; Ciloglu, K.	Evaluation of Structural Health Monitoring Techniques for Damage Assessment through a Benchmark Physical Model
Vestroni, F.; Cerri, M.; Vidoli, S.; dell'Isola, F.	Structural Health Monitoring Based on Measurements of Dynamic Response
Santa, U.; Bergmeister, K.; Strauss, A.	Structural Monitoring - Experiences and Results

Session 6.2-1: Buildings I	
<i>Chair:</i>	<i>Co-Chair:</i>
Author(s)	Title
Rakicevic, Z.; Jurukovski, D.	Effectiveness of Viscous Damping in Controlling of Storey Displacement
Mata, P.; Barbat, A.; Oller, S.	Improvement of the Seismic Behaviour of Precast Concrete Structures by Means of Energy Dissipating Devices.
Lee, D.; Kim, H.; Lee, S.	Efficient Vibration Analysis for Floors in A Shear Wall Building Structure
Mentes, G.	Investigation of the deformations and movements of the TV tower in Sopron influenced by weather variations and ground motions
Anarkulov, N.; Begaliev, U.	Seismic Isolation Systems in Kyrgyzstan

Session 5-2: Health Monitoring II: Bridges	
<i>Chair:</i>	<i>Co-Chair:</i>
Author(s)	Title
Niemeier, W.	Four Years of Monitoring of an Old Bridge with Continuous Geodetic Measurements and Data Processing using Artificial Neural Networks
Hillemeier, B.; Scheel, H.	Fast Location of Prestressing Steel Fractures in Parkinglots and Bridge Decks
De Corte, W.; Van Bogaert, P.	Fatigue Assessment of Orthotropic Bridge Decks through High-frequency Strain Gauge Measurements
Kister, G.; Winter, D.; Badcock, R.; Fernando, G.; Gebremichael, Y.	Structural Health Monitoring of an All-composite Bridge using Bragg Grating Sensors

Minisymposia M6-1: Earthquake Mitigation via Control Algorithms - Experiment & Applications

Chair: Melkumyan, Syrmakezis

Co-Chair: M. Gusenbauer, M. Krommer

Author(s)	Title
Casciati, F.; Dusi, A.; Manzoni, E.	Seismic Risk Mitigation for Schools and Hospitals: Some Recent Italian Experiences
Syrmakezis, C.; Papaevangelou, P.	Earthquake Resistant Design of Hospital and School Buildings
Melkumyan, M.	First Application of the Dynamic Damper in the Design of Seismically Isolated Dwelling House
Soldatova, L.; Tentiev, J.; Bogatenkov, S.	Active Seismic Protection System for Buildings with Bearing Walls

Minisymposia M6-2: Earthquake Mitigation via Control Algorithms – Theory

Chair: Kovaleva, Volkov

Co-Chair: M. Gusenbauer, M. Krommer

Author(s)	Title
Volkov, A.; Belyaev, S.; Evard, M.	Simulation of a Feedback Control of Low-frequency Vibrations by an Active Shape Memory Element
Aghalovyan, L.; Gevorkyan, R.; Sahakyan, A.	Optimization of the Resistance of Base-foundation Packet of Constructions under Seismic and Force Actions
Aghalovyan, L.; Aghalovyan, M.	On Forced Vibrations of Beams under Seismic and Force Actions at Presence of Viscous Resistance
Kovaleva, A.	Control of Random Rocking Dynamics of Block Structures
Kogan, M.; Balandin, D.	Optimal Robust H^∞ - Controller for Active Attenuating Oscillations of High Story Buildings under Seismic Excitations

Minisymposia M2: Towards Enhancing Structural Integrity

Chair: C. Eberst

Co-Chair: M. Gusenbauer, M. Krommer

Author(s)	Title
Kugi, A.; Thull, D.; Seidel, H.	Design Optimization for MEMS: A Case Study
Irschik, H.	Distributed Strain Sensors for Measuring Structural Entities such as Relative Displacements, Slopes or Hinge Rotations: 3D-Formulation and Application to Piezoelectric Beam Sensing
Casciati, F.; Faravelli, L.; Rossi, R.	Fuzzy Controllers for Structural Integrity
Schlacher, K.; Ennsbrunner, H.	Geometric Spatial Discretization for Piezoelectric Structures
Gusenbauer, M.; Irschik, H.; Eberst, C.	Stress Suppression by Smart Material Actuation

Minisymposia M4: In-situ Assessment of Important Buildings and Infrastructure	
<i>Chair:</i>	<i>Co-Chair:</i>
Author(s)	Title
Flesch, R.	In-situ Assessment of Important Buildings and Infrastructure - Background
Hoffmeister, B.	Assessment of the Impact of Existing Structures on the Planning and Design of New Industrial Facilities in Moderate Seismic Regions
Lu, S.; Ralbovsky, M.; Köllner, W.; Flesch, R.	Assessment of Lifeline Structures in the Case of Hospitals in Seismic Zones 3 and 4 in Austria
Ralbovsky, M.; Köllner, W.; Geier, R.	Recent Activities of Arsenal Research in the Field of in-situ Assessment
Deix, S.	Updating FE-Models from Experimental Modal Analysis for Damage Detection in Civil Structures (Bridges)

Session
 Sectional Key Note
 Chair
 Lectures

Session 1-9: Modelling, Design and Dynamic Analysis V	
<i>Chair: J. Holnicki-Sculz</i>	
<i>Co-Chair: C. Zehetner, B. Manhartgruber</i>	
Author(s)	Title
Blekhman, I.; Shishkina, E.	On Vibrational Dynamic Materials
Ikhouane, F.; Rodellar, J.	Identification of the Hysteretic Bouc-Wen Model Parameters. A limit Cycle Approach
Ziemianski, L.; Piatkowski, G.	The Detection and Localization of an Attached Mass in Plates.
Andrade, C.; Martinez, I.	Permanent Electrochemical Sensors for the Corrosion Control in Reinforcement Structures.
Petti, L.; Palazzo, B.; De Iuliis, M.	Torsional Seismic Response Control of Irregular Plan Systems by Using Viscous Dampers

Session 1-11: Modelling, Design and Dynamic Analysis VI	
<i>Chair: R. Lerch</i>	
<i>Co-Chair: C. Zehetner, B. Manhartgruber</i>	
Author(s)	Title
Gabbert, U.; Köppe, H.; Nestorovic, T.; Seeger, F.	Finite Element Based Overall Design of Controlled Smart Structures
Nyashin, Y.; Lokhov, V.; Kiryukhin, V.	Modeling and Control of Stress and Strain by Eigenstrain
Troger, H.; Steindl, A.; Barkow, B.	Control of Unfolding of Space Structures which are Composed by Strings
Baratta, A.; Corbi, O.	An Open-Loop Approach Through The Inverse Response Spectrum

Session 1-13: Modelling, Design and Dynamic Analysis VII	
<i>Chair: H. Irschik</i>	
<i>Co-Chair: C. Zehetner, B. Manhartgruber</i>	
Author(s)	Title
Krommer, M.	Shape Control of Sub – Domains of Structures
Nader, M.; von Garssen, H.; Irschik, H.	Vibration Compensation of Slender Beams and Thin Shell Structures by Distributed Piezoelectric Patches
Kiryukhin, V.; Nyashin, Y.; Lokhov	Design of Optimal Support Using the Stress and Strain Control Technique
Lokhov, V.; Nyashin, Y.; Kiryukhin, V.	Stress and Strain Control by Eigenstrain in Engineering Structures

Session 1-15: Passive Control I	
<i>Chair: R. Scheidl</i>	
<i>Co-Chair: C. Zehetner, B. Manhartgruber</i>	
Author(s)	Title
Hochrainer, M.; Ziegler, F.	Tuned Liquid Column Damper–A Cheap Device for Control of Tall Building Vibrations
Taflanidis, A.; Angelides, D.; Manos, G.	Liquid Column Vibration Absorbers for Rotational Vibration Control of Structures
Pirner, M.; Urushadze, S.	Liquid Damper for Suppressing Horizontal and Vertical Motion of Footbridge
Saeed Monir, H.; Mahdi Eslami, M.	Vibration Control of Structures by Using a New Passive Energy Absorbing System

Session 1-10: Adaptive Control and Fuzzy Algorithms	
<i>Chair: C. Boller</i>	
<i>Co-Chair: J. Gerstmayr</i>	
Author(s)	Title
Choi, K.; Cho, S.; Lee, J.; Lee, I.	Active Control for Seismic Response Reduction using Modal-fuzzy Approach
Pozo Montero, F.; Ikhoulane, F.; Rodellar Benedé, J.	Adaptive Backstepping Control of Hysteretic Base-isolated Structures
Neild, A.; Stoten, D.; Drury, D.; Taylor, C.	Adaptive Control of Real-Time Dynamic Substructuring Experiments
Zhou, L.; Xu, X.; Yan, G.	Fuzzy Logic and Genetic Algorithms for Intelligent Control of Structure Using MR Dampers
Holicky, M.	Fuzzy Optimisation of Structural Performance

Session 1-12: Optimal Control Methods I	
<i>Chair: D. Indeitsev</i>	
<i>Co-Chair: J. Gerstmayr</i>	
Author(s)	Title
Gerstmayr, J.; Irschik, H.; Stangl, M.	Optimal Control Parameters of Flexible Multibody Systems with Contact
Ryzynski, W.; Kowalczyk, R.	Optimal Control Seismic Response of Frame Structures Including Soil-Structure Interaction Effects
Sukhanov, A.; Ispolov, Y.	Optimal Control Over the Motion of an Active Buoy
Shoureshi, R.; Permana, V.; Lim, S.	Robust Control and Informatics for Structural Vibrations

Session 1-14: Optimal Control Methods II	
<i>Chair: Rodellar</i>	
<i>Co-Chair: J. Gerstmayr</i>	
Author(s)	Title
Wu, J.; Shen, Y.	Optimal Parameters of Tuned Liquid Column Damper Design for Damped SDOF Wind-Excited Structures
Sahinkaya, M.; Burrows, C.	Optimum Location of Sensors and Actuators for Machine Vibration Control
Iourtchenko, D.; Menaldi, J.	Optimal Tracking of Stochastic Systems with Bounded Control Force
Wu, K.; Janocha, H.	Optimal Thickness and Depth for Embedded Piezoceramic Actuators

Session 3-1: Experimental Methods I	
<i>Chair:</i>	<i>Co-Chair: J. Gerstmayr</i>
Author(s)	Title
Magonette, G.	Recent Advances and Future Needs in Large-Scale Experimental Facilities
Marazzi, F.; Marazzi, R.; Magonette, G.	Energy Considerations about Shaker Excited Structures
Reinhorn, A.; Sivaselvan, M.; Weinreber, S.; Shao, X.	Real-Time Dynamic Hybrid Testing of Structural Systems
Vidal, V.; Molina, J.; Magonette, G.	Systematic Experimental Errors in Pseudodynamic Tests

Session 6.1-2: Bridges II: Control and Pedestrian Bridges	
<i>Chair:</i>	<i>Co-Chair:</i>
Author(s)	Title
Garcia, J.; Dorka, U.; Magonette, G.; Bosi, A.	Semi-Active Control of Bridges. I: Laboratory Testing
Rodellar, J.; Luo, N.; Villamizar, R.; Garcia, J.; Dorka, U.;	Semi-Active Control of Bridges. II: Control Algorithms
Reiterer, M.	Control of Pedestrian-induced Bridge Vibrations by Tuned Liquid Column Dampers
Occhiuzzi, A.; Spizzuoco, M.; Serino, G.	Semi-active Control of Pedestrian-induced Vibrations in Footbridges Through MR Dampers in TMDs

Session 6.2-2: Buildings II: Base Isolation	
<i>Chair:</i>	<i>Co-Chair:</i>
Author(s)	Title
Martelli, A.; Forni, M.	Progress of Application of Seismic Isolation and Passive Energy Dissipation
Jung, H.; Park, K.; Spencer, B.; Lee, I.	Seismic Protection of Base Isolated Building Using Robust Hybrid Control Systems
Wang, S.; Wu, X.; Li, H.	Overturning Analysis for Base Isolated Buildings to Seismic Excitations
Erdik, M.; Uckan, E.	Structures With Seismic Isolation in Turkey
Fujitani, H.; Sodeyama, H.; Tomura, T.; Watanabe, H.; Soda, S.	Implementation of 400kN Magnetorheological Damper for an Actual Base-isolated Building

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Author(s)	Title
Chakraborty, A.; Basu, B.	Non-linear Dynamic Response of a Vehicle with Tuned Mass Damper
Vavro, J.; Kopecky, M.; Saga, M.	The Experimental Measurement the Natural Frequencies of the Automobile Disc and their Analysis
Sapinski, B.; Rosól, M.	Vibration Suppression of a MR Suspension System for a Driver's Seat
Obieta, G.; Martinez-Esnaola, M.; Sánchez, F.; Santiago, J.; Sagartzazu, X.	Application of Bragg Gratings to the Structural Analysis of a Lift Car Frame

Session 6.3-1: Different Structures I: Aerospace, Off- Shore, Ship	
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<i>Author(s)</i>	<i>Title</i>
Grünewald, M.; Maier, R.; Jaenker, P.; Pfeiffer, A.	New Mechatronic systems for aeronautic applications
Dittrich, K.; Becker, J.; Luber	Structural Concepts for Morphing Wing
Cami, R.; Indirli, M.; Muzzarelli, M.; Spadoni, B.; Clemente, P.	The Use of an Innovative 3D-Isolation System for Seismic and Ambient Vibration to Protect the Roman Ship Excavated at Ercolano

Session 5-3: Health Monitoring III	
<i>Chair:</i>	<i>Co-Chair:</i>
<i>Author(s)</i>	<i>Title</i>
Peeters, B.; Van der Auweraer, H.	Operational Modal Analysis, a Tool for Structural Health Monitoring
Celebi, M.	Two Cases for Modern Health Monitoring of Structures
Uhl, T.; Klepka, A.; Bogacz	Modal Analysis for Nonstationary Systems and its Application for Structural Health Monitoring
Lapko, A.; Kollataj, J.; Sadowska-Buraczewska, B.; Kowalczyk, R.	Application of Telemetry Technique for Long – Term Monitoring of R C Building Structures

Session 5-4: Health Monitoring IV: Concrete Structures	
<i>Chair:</i>	<i>Co-Chair:</i>
<i>Author(s)</i>	<i>Title</i>
Pearson-Kirk, D.; Solan, B.	The Benefits of Testing and Monitoring the Durability of Concrete Structures
Song, G.; Gu, H.; Mo, Y.; Hsu, T.; Dhonde, H.	Health Monitoring of a Concrete Structure Using Piezoceramic Materials
Wawrusiewicz, A.	The Evaluation of State of Concrete Structure by Multi Mapping
De Wit, M.; Hovhannessian, G.	The Strain Relief Method for Measuring the Strain in Concrete
De Wit, M.; Hovhannessian, G.	The Use of Acoustic Monitoring to Manage Concrete Structures

Session 5-5: Health Monitoring V	
<i>Chair:</i>	<i>Co-Chair:</i>
<i>Author(s)</i>	<i>Title</i>
Binici, B.; Kallivokas, L.	Crack Identification in Beams Using Multiple Spectra
Tang, L.	A Rapid Technique for Detecting Corrosion of Steel in Reinforced Concrete Structures
Della Vedova, M.; Elsener, B.; Evangelista, L.	Corrosion Protection and Monitoring of Post-tensioning Tendons
Sen, R.; Mullins, G.; Suh, K.; Winters, D.	Long Term Corrosion Monitoring of Underwater FRP Wrapped Prestressed Piles
Kim, W.; Kim, S.; Lee, J.	A Damage Detection Technique of Composite Laminates with Embedded FBG Sensors

Minisymposia M1-1: Cultural Heritage Preservation (INCOMED)	
<i>Chair: F. Casciati</i>	<i>Co-Chair: M. Stangl, M. Dibold</i>
Author(s)	Title
Casciati, S.; Faravelli, L.	Fastening Cracked Blocks by SMA Devices
Chrysostomou, C.; Demetriou, T.; Stassis, A.	Seismic Protection of an Aqueduct by Innovative Techniques
Ouled Chtiba, M.; Choura, S.; El-Borgi, S.	Design of Passive Controllers for the Confinement of Structural Vibrations
Berezovski, A.; Engelbrecht, J.; Maugin, G.	Dynamics of Phase Boundaries in Thermoelastic Solids

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<i>Chair: Chair: F. Casciati</i>	<i>Co-Chair: M. Stangl, M. Dibold</i>
Author(s)	Title
Boumechra, N.	Parametric Analysis of Vibrational Behaviour of Ancient Structures (Cases of Two Historical Buildings)
van der Eijk, C.; Zhang, Z.	Seismic Dampers Based on Shape Memory Alloys (SMA): Metallurgical Background and Component Modelling
Marinelli, A. ; Syrmakezis, C. ; Antonopoulos, A.	Structural Response of Masonry Historical Structures Using Fragility Curves
El-Attar, A.; Osman, A.	Seismic Response of Two Historical Islamic Minarets

Minisymposia M3-1: Sensor Technology Toward Structural Control (S3T)	
<i>Chair: L. Faravelli</i>	<i>Co-Chair: M. Stangl, M. Dibold</i>
Author(s)	Title
Boller, C.	Smart Technologies in Structural Control - Are we all Talking about the Same Thing?
Faravelli, L.; Rossi, R.	Design and Implementation of a Self-powered Accelerometric Station
Domaneschi, M.; Casciati, F.; Inaudi, D.; Figini, A.	Long-gauge Fibre-optic Sensors: a New Approach to Dynamic System Identification
Bydzovsky, J.; Kraus, L.; Svec, P.	Magnetoelastic Tenzometry for Harsh Environments

Minisymposia M3-2: Sensor Technology Toward Structural Control (S3T)	
<i>Chair: L. Faravelli</i>	<i>Co-Chair: M. Stangl, M. Dibold</i>
Author(s)	Title
Liu, S.	Strategic Issues in Sensors and Smart Structures
Scruby, C.; Cawley, P.; Hayward, G.	Research into NDE Sensors for Structural Monitoring
Nishitani, A.	Smart Concept and Smart Sensing
Chang, P.	Passively Powered Smart Sensor for Infrastructure Monitoring

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<i>Chair: A. Baratta</i>	<i>Co-Chair: Reiterer, C. Adam</i>

Author(s)	Title
Heuer, R.; Adam, C.	Passive Control of Structures and Structural Elements Considering Nonlinear Response
Boroschek, R.; Barbat, A.	Analytical Model for High Damping Elastomers Applied to Energy Dissipating Devices. Numerical Study and Experimental Validation
Lee, S.; Kang, K.; Joo, S.; Min, K.	Determination of Maximum Force Limit of Damping Devices Using Response Estimation Models
Li, K.; Darby, A.	Impact Dampers for Dynamic Structural Control

Session 1-17: Passive Control III	
<i>Chair: A. Barbat</i>	<i>Co-Chair: Reiterer, C. Adam</i>

Author(s)	Title
Spina, G.; Ramundo, F.	Seismic Protection of Structures by MR dampers
De Iuliis, M.; Palazzo, B.; Petti, L.	Reduction Factors for Performance Based Seismic Design of Extra-Structural Damped Structures
Ye, L.; Jie, J.; Wu, W.; Yang, S.	Seismic Response Analysis for Energy Dissipation Structure Based on Energy Balance
Palazzo, B.; Petti, L.; De Iuliis, M.	A Passive Robust Control Strategy: Base Isolation and Tuned Mass Damping

Session 1-18: Semi -Active Control I	
<i>Chair: F. Casciati</i>	<i>Co-Chair: Reiterer, C. Adam</i>

Author(s)	Title
Shih, M.; Sung, W.	Energy Dissipation Testing of Displacement Dependent Semi-Active Hydraulic Damper
Temimi, H.; El-Borgi, S.; Choura, S.; Sadek, F.; Riley, M.	Time Delay Effects on Semi-active Control of Seismically Excited Nonlinear Structures
Medeot, R.; Braun, C.	New Challenges in Semi-active Systems for Structural Control Engineering - THE EC-Founded Projects 'SPACE' and 'VAST-IMAGE'
Li, H.; Chang, Z.; Wang, S.	Semi-Active Control for Eccentric Structures with MR Damper

Session 1-19: Semi -Active Control I	
<i>Chair: L. Faravelli</i>	<i>Co-Chair: Reiterer, C. Adam</i>
Author(s)	Title
Amini, F.; Tahernia, I.	Semi-Active Control of Coupled Building by Pole Assignment Method
Shih, M.; Sung, W.	Predictive Control of On-Off Semi-Active Hydraulic Damper
Pasquino, M.; Brigante, M.; Fabbrocino, F.; Modano, M.	Stability Control Analysis of 1-DOF system
Reinhorn, A.; Sivaselvan, M.; Weinreber, S.; Shao, X.	A Novel Approach to Dynamic Force Control
Spizzuoco, M.; Occhiuzzi, A.; Serino, G.	A Semi-active MR Damper-Brace System's Control Law Applied to the Earthquake Benchmark Building

Session 4-1: Assessment I	
<i>Chair:</i>	<i>Co-Chair:</i>
Author(s)	Title
Ceravolo, R.; Demarie, G.; De Stefano, A.	Bell-Towers Monitoring from Ambient Vibration Measurements
Lang, D.; Schwarz, J.; Abrahamczyk, L.; Schott, C.; Swain, T.	Instrumental Testing and Numerical Investigation of RC Frame Structures in Turkish Earthquake Regions
Chen, X.; Zhu, H.; Chen, C.	Parametric Identification of Structure Using Dynamic and Static Response
Wang, Y.; Wong, K.	Control of Structural Damage Due to Earthquakes Using a New Damage Assessment Model
Ung Quoc, H.; Mounajed, G.	Development of a New Tangent Damage Model for Concrete in Symphonie F.E Code of CSTB. Application to Industrial Structures in Concrete.

Session 3-2: Experimental Methods II	
<i>Chair:</i>	<i>Co-Chair:</i>
Author(s)	Title
Silva, M.; Brasil, R.	Computation of RC Structures Large Displacements: Optimization Applied to Experimental Results
Weber, B.; Paultre, P.; Proulx, J.	Damage Detection in a Two-Story Concrete Frame Building Considering Parameter Sensitivities with Respect to Measurement Errors
Yang, T.; Chen, X.; Yue, Q.	Large Scale Model Experimental Research of Prestressed Concrete Containment of Nuclear Power Station Strengthened with Externally Wrapped Carbon Fiber Sheets
Manea, I.; Budulan, P.	Experimental Modal Analysis Utilization in View of High Voltage Switching Equipment Assessments After Seism or Short-circuit Events
Chen, Y.; Azzam, R.	Mechanism of Crack Extension in Sandstones under Creep Condition

Session 4-3: Assessment III	
<i>Chair:</i>	<i>Co-Chair:</i>
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Saleh, A.; Zaghw, A.	Seismic Performance Evaluation of Two Historical Islamic Minarets Using the Capacity Spectrum Method
Uckan, E.; Erdik, M.; Onem, G.	Seismic Evaluation and Retrofit Criteria of the Bolu Viaduct #1
Falcao Silva, M.; Coelho, E.; Costa, A.	Overall assessment of reinforced concrete structures with energy devices
Marmureanu, G.; Marmureanu, A.; Cioflan, C.; Balan, S.	Assessment of Vrancea Earthquake Risk in a Real / Nonlinear Seismology

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Bairrao, R.; Queval, J.; Sollogoub, P.	Performance of the European Shaking Tables - First Tests with a New Non-Linear Specimen
Serino, G.; Occhiuzzi, A.; Spizzuoco, M.	Shaking Table Tests on a Steel Building Prototype Equipped with Magnetorheological Dampers
Chu, Y.; Chang, K.	Shaking Table Test Study on a Full-scale Steel Frame with Added Viscoelastic Dampers
Tashkov, L.; Antimovski, A.; Kokalevski, M.	Shaking Table Test of 1/3 Scale Model Base Isolated by ALSC Sliding System
Dolce, M.; Cardone, D.; Moroni, C.; Nigro, D.; Nicoletti, M.	Shaking Table Tests on a 1/4-scaled R/C Three-Dimensional Frame Equipped with Different Passive Control Systems

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<i>Chair:</i>	<i>Co-Chair:</i>
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Radic, J.; Bleiziffer, J.	Programme for Monitoring Large Bridges at Croatian Adriatic Coast
Kivi, E.; Kulbach, V.	Control of Dimensioning and Investigation of the Bridge for Crossing a Strait in Estonia
Park, K.; Koh, H.; Ok, S.; Seo, C.	Seismic Response Control of Cable-stayed Bridges using Fuzzy Supervisory Control Technique
Boutonnet, L.	Strengthening of Kingston Bridge in Glasgow

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<i>Chair:</i>	<i>Co-Chair:</i>
Author(s)	Title
Cimellaro, G.; Marazzi, F.	Adjacent Coupled Building Structures Controlled using MR Dampers
Cimellaro, G.; Lopez Garcia, D.	Random Seismic Response of Adjacent Building Structures Linked by Linear Connective Devices
Avila, J.; Gutierrez, K.	Inelastic Seismic Behavior Comparison of a Reinforced Concrete 10 Level Structured Building Without and With Passive Energy Dissipators
Jurukovski, D.; Rakicevic, Z.	Structural Retrofitting of a 6-Storey Hotel Building with HDRB and Viscous Dampers
Kim, T.; Lee, D.	Analysis of Vibrations Induced by High Frequency Dynamic Loads in Floors

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Ciucci, M.; Paolacci, F.; Ludovisi, G.; Moccaldi, A.	Seismic Protection of Major-Hazard Industrial Installations by using Viscoelastic Devices
Mrazek, T.; Belyaev, A.; Irschik, H.	Test-based Modeling of Hydraulic Shock Absorbers
Fujita, T.; Hattori, T.; Suzuki, Y.; Yasuda, M.; Tsuchiya, M.	Passive Microvibration Control of Precision Machines Using Shunted Piezoceramics
Holl, H.; Hammelmüller, F.; Irschik, H.	Vibration Control for a Coiling Process

Session 6.1-4: Bridges IV: Steel- and Railway Bridges	
<i>Chair:</i>	<i>Co-Chair:</i>
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Mautner, M.	Serviceability Check for New Railway Bridges - Dynamic Measurements Carried out on the Steel Structure "Heugasse" Located in km 13.392 on the ÖBB - Southern Railway Line
Van Bogaert, P. ; De Corte, W.	Static and Continuous Measuring on Steel Tied Arch Bridge Crossed by Lorries and Freight Trains
Kang, S.; Koh, H.; Park, K.	Vibration Control and Fatigue Reliability Assessment of Steel-composite High-speed Railway Bridges
Herter, J.	Assessment of the Remaining Fatigue Life of Existing Steel Bridges Based on Field Testing and Inspection Concepts

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<i>Chair:</i>	<i>Co-Chair:</i>
Author(s)	Title
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Kullaa, J.	Latent Variable Models to Eliminate the Environmental Effects in Structural Health Monitoring
Wahbeh, M.; Caffrey, J.; Masri, S.	Monitoring the Vibrations of Dispersed Civil Structures Through the Use of a Vision-Based Method
Mehdianpour, M.; Peil, U.	Life Cycle Prediction of Steel Structures under Fatigue Loads by Means of Monitoring and Parallel Testing

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Author(s)	Title
Syrmakezis, C.; Asteris, P.	Seismic Protection of Historical Structures and Monuments
Pichler, B.; Hellmich, C.; Mang, H.	Monitoring of Rockfall-endangered Oil Pipelines

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<i>Chair:</i>	<i>Co-Chair:</i>
Author(s)	Title
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Vlad, I.; Vlad, M.	Health Monitoring of a Building During the Demolition of its Lateral Wings by Controlled Explosions
Strauss, A.; Bonfiglioli, B.; Bergmeister, K.; Pascale, G.	Monitoring Uncertainties regarding Carbonfibre Strengthening Elements
Volokhovskiy, V.; Vorontsov, A.; Kagan, A.; Sukhorukov, V.	Interpretation of Magnetic Wire Rope Inspection Data with regard to Structure Mechanics
Vaghi, A.; Ferrari, S.	Sensor Management for Landmine Detection by a Graphical Model Approach

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Haberler, M.	A Fuzzy System for the Analysis of Geodetic Landslide Monitoring Data
Tang, A.; Wu, Y.; Sun, X.; Zhao, Y.	A Geological Information System Based on Lifeline Earthquake Risk Assessment

Session M5: Innovative Applications of Smart Technology	
<i>Chair: J. Holnicki-Szulc</i>	<i>Co-Chair: M. Krommer</i>
Author(s)	Title
Bekö, A.; Honicki-Szulc, J.	Health Monitoring of Cable Systems
Mikulowski, G.; Holnicki-Szulc, J.	Adaptive Aircraft Shock Absorbers
Pawlowski, P.; Holnicki-Szulc, J.	Adaptive Structures under Extreme Loads - Impact Detection, Self-Adaptation, Self-Repairing
Sims, N.; Zhang, Y.	Piezoelectric Active Control for Workpiece Chatter Reduction during Milling
Kolari, K.; Heinonen, J.; Kärnä, T.	Mitigation of Dynamic Ice Actions on Offshore Wind Turbines

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<i>Chair:</i>	<i>Co-Chair: M. Krommer</i>
Author(s)	Title
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Pardi, L.; Woodward, R.; Dumoulin, C.; Golterman, P.	The Role of Monitoring in Bridge Management
Geier, R.; Hillgarter, N.; Flesch, R.	SAMCO Certification Procedure
Feltrin, G.; Weber, F.	On the Relative Motion of Tuned Mass Dampers

Session M8: Fluid Power Actuators for Structural Control	
<i>Chair: r. Scheidl</i>	<i>Co-Chair: M. Krommer</i>
Author(s)	Title
Försterling, H.; Furtner, P.	Applications of Hydraulic Actuators for Damping and Isolation of Structural Oscillations
Scheidl, R.	Fluid Power Actuators for Structural Control - an Overview
Manhartsgruber, B.	Hydraulic Switching Techniques in Structural Control - Concepts and Potentials
Gstöttenbauer, N.; Kainz, A.; Manhartsgruber, B.; Scheidl, R.	Experimental and Numerical Investigation of the Squeeze Mode of Magneto-Rheological Fluids

Session M9: Control of Structures + Applications	
<i>Chair: K. Schacher</i>	<i>Co-Chair:</i>
Author(s)	Title
Holl, J.; Schlacher, K.; Keintzel, G.	Active Rejection of Chatter-Vibrations in Steel Rolling Mills
Rudolph, J.; Woittennek, F.	Motion Planning for Simple Elastic Structures
Kugi, A.; Kemmetmüller, W.	Nonlinear Control in Electrorheological Fluid Devices
Ennsbrunner, H.; Schlacher, K.	Vibration Control of a Flexible Structure consisting of a Car and a Beam with Tip Mass