

6th International Operational Modal Analysis Conference

(IOMAC 2015)

**Gijón, Spain
12-14 May 2015**

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IOMAC 2015 Detailed Programme

TUESDAY, 12 – 2015

Room ARAMO Tuesday, 12 08:30-09:00	Opening Session of IOMAC 2015
Room ARAMO Tuesday, 12 09:00-10:00	Keynote Lecture Chair: A.F. Canteli IMPLICATIONS OF CLOSELY SPACED MODES IN OMA Rune Brincker
Technical Session 1 Room NARANCO Tuesday, 12 10:00-10:40	Applications in Civil Engineering Chair: A. Morassi
Paper 1 ID: 221	DYNAMIC IDENTIFICATION OF MOUMENTAL AND HISTORICAL MINARET OF THE ŞEHADET *** Cavit Serhatoğlu, Ramazan Livaoğlu, Bilal Bağbancı
Paper 2 ID: 211	MODAL ANALYSIS OF THE TOWER OF THE LABORAL CITY OF CULTURE ***** G. Ismael, A. Pardo, F. Pelayo, A. Martín, Manuel López-Aenlle, L.B. Peral
Technical Session 1 Room ARAMO Tuesday, 12 10:00-10:40	Structural Modification Chair: D. Foti
Paper 3 ID: 802	COMPARISON OF DIFFERENT TECHNIQUES TO SCALE MODE SHAPES IN OPERATIONAL MODAL ANALYSIS ***** Luis Borja Peral Mtnez., F. Pelayo, M. García, Manuel López-Aenlle, G. Ismael
Paper 4 ID: 702	A NEW METHOD FOR PASSIVE PARTIAL EIGENSTRUCTURE ASSIGNMENT IN VIBRATING SYSTEMS ***** Roberto Belotti, Ilaria Palomba, Dario Richiedi, Alberto Trevisani
10:40-11:20	Coffee break

Technical Session 2 Room NARANCO Tuesday, 12 11:20-13:00		Applications in Civil Engineering Chair: C. Gentile
Paper 5	ID: 224	EFFECT OF INFILL WALLS AND PLASTER FOR A FOUR STOREY R/C BUILDING ***** Onur Kaplan, Yucel Guney, Adem Doğangün, Ramazan Livaoglu
Paper 6	ID: 222	DYNAMIC CHARACTERISTICS OF MINARETS OF HOCA TABIP MOSQUE ***** Ramazan Livaoglu, Mehmet Hüdai Baştürk, Cavit Serhatoğlu, Adem Doğangün
Paper 7	ID: 212	MONUMENT OF CHRIST THE KING - OMA STUDY ***** Jacek Grosel, Wojciech Sawicki, Jakub Marcinowski, Zbigniew Wójcicki
Paper 8	ID: 116	OPERATIONAL MODAL ANALYSIS AND DETECTION OF NON-LINEAR STRUCTURAL BEHAVIOR OF BOWSTRING ARCH BRIDGE ***** Enrique García-Macías, Rafael Castro-Triguero, Rafael Gallego, J. Carretero, Miguel Ángel Gómez-Casero
Paper 9	ID: 215	AMBIENT VIBRATION TESTING AND STRUCTURAL IDENTIFICATION OF A CABLE-STAYED BRIDGE ***** Rocco Alaggio, Chiara Bedon, Francesco Benedettini, Michele Dilena, Antonino Morassi
Technical Session 2 Room ARAMO Tuesday, 12 11:20-13:00		Structural Health Monitoring Chair: C. Ventura
Paper 10	ID: 601	A NEW TECHNIQUE FOR DAMAGE LOCALISATION USING ESTIMATES IN KREIN SPACES ***** Armin Lenzen, Max Vollmering
Paper 11	ID: 219	OPERATIONAL MODAL ANALYSIS APPLIED TO A SEISMIC BEHAVIOUR ASSESSMENT OF LONG VIADUCTS ***** Javier Fernández, Lutz Hermanns, Alberto Fraile, Mariano Ahijado, Alejandro Hernández, J.M. Simón-Talero

Paper 12	ID: 856	DEVELOPMENT AND APPLICATION OF A LONG AND SHORT TERM MONITORING/SOFTWARE SYSTEM WITH A SMART SENSOR NETWORK ***** Thomas Schmidt, Arne Büttner, Daniel Herfert, Maik Gollnick
Paper 13	ID: 860	NEW INSIGHTS IN THE MODAL IDENTIFICATION OF A MONUMENTAL STRUCTURE FROM LONG-TERM SEISMIC STRUCTURAL MONITORING ***** Umberto Di Sabatino, Vincenzo Gattulli, Marco Lepidi, Francesco Potenza
Paper 14	ID: 120	MODAL IDENTIFICATION OF SYSTEMS SUBJECTED TO HARMONIC EXCITATION WITH VARIABLE FREQUENCY AND AMPLITUDE ***** Virginie Delavaud, Thibault Gouache, Baptiste Coulange, Luc Olivier Gonidou, Simon Foucaud
	13:00-14:30	Lunch
Technical Session 3 Room NARANCO Tuesday, 12 14:30-15:50		Applications in Civil Engineering Chair: C. Rainieri
Paper 15	ID: 208	EXPERIMENTAL AND NUMERICAL ASSESSMENT OF THE UNEXPECTED DAMPING IN A SLENDER FOOTBRIDGE AT MURCIA (SPAIN) ***** Jorge Pérez Aracil, Alejandro M. Hernández Díaz, Javier Fernando Jiménez-Alonso, Andrés Sáez Pérez
Paper 16	ID: 253	LAMINATED GLASS RESISTANCE AGAINST HUMAN IMPACT ***** José A. Parra-Hidalgo, M ^a Consuelo Huerta, Antonia Pacios-Álvarez, Jacobo Sánchez Herrera
Paper 17	ID: 218	UNCERTAINTY OF DAMPING RATIOS ESTIMATED IN A MULTI-SETUP OMA OF A CABLE-STAYED BRIDGE ***** Javier Cara, Elsa Caetano, Filipe Magalhaes, Enrique Alarcón
Paper 18	ID: 256	ANALYSIS OF STRUCTURAL GLASS PANELS UNDER IMPACT LOADING USING OPERATIONAL MODAL ANALYSIS ***** A. Ramos, F. Pelayo, M.J. Lamela, A. Fernández-Canteli, M. López-Aenlle, K. Persson

Technical Session 3 Room ARAMO Tuesday, 12 14:30-15:50	Structural Health Monitoring Chair: F. Magalhães
Paper 19 ID: 851	OPERATIONAL MODAL ANALYSIS OF A CANTILEVER IN A WIND TUNNEL USING OPTICAL FIBER BRAGG GRATING SENSORS ***** Eugen Neu, Frank Janser, Akbar A. Khatibi, Adrian C. Orifici
Paper 20 ID: 855	OMA DYNAMIC IDENTIFICATION OF A MASONRY CHIMNEY WITH SEVERE CRACKING CONDITION ***** David Bru, Salvador Ivorra, F.J. Baeza, R. Reynau, Dora Foti
Paper 21 ID: 857	NON-DESTRUCTIVE VIBRATION-BASED INVESTIGATION OF AN EXISTING PRESTRESSED R.C. BRIDGE ***** Paolo Franchetti, Michele Frizzarin, Andrea Leonardi, Paolo Adda, Jean Daniel Rotilio
Paper 22 ID: 861	CHANGES OF DYNAMIC PROPERTIES IN AN ANCIENT MASONRY BUILDING DUE TO ENVIRONMENTAL CONDITIONS ***** Francisco Calderón, Gustavo Palazzo, Victor Roldan, Arnaud Deraemaeker, Guilles Tondreau
15:50-16:30	Coffee break
Room ARAMO Tuesday, 12 16:30-16:40	Eulogy to FRANCESCO BENEDETTINI
Room ARAMO Tuesday, 12 16:40-17:30	Round Table
Room ARAMO Tuesday, 12 18:00-19:00	Scientific Committee Meeting
Tuesday, 12 19:30-22:30	Social Program Bus to Trabanco Cider Brewery (19:30) Visit Trabanco Cider Brewer (20:00) Dinner in Trabanco Cider Brewery (20:45) Bus return to ABBA Hotel (22:30)

WEDNESDAY, 13 - 2015

Technical Session 4 Room NARANCO Wednesday, 13 09:00-10:40	Applications in Civil Engineering Chair: Thomas Schmidt
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Paper 23	ID: 254	THICKNESS VARIATION AND NON UNIFORM PLATE BEHAVIOUR USING MODAL TEST RESULTS ***** Jesús Alonso Álvarez, Víctor de la Cruz-Salmerón, Álvaro Yañez González, Antonia Pacios-Álvarez, M ^a Consuelo Huerta
Paper 24	ID: 207	IMPACT OF SUPERIMPOSED AND TRUCK LIVE LOAD ON MODAL CHARACTERISTICS OF SHORT-SPAN BRIDGES ***** Arturo González, Enrique Covián, Miguel Casero-Flórez
Paper 25	ID: 216	OPERATIONAL MODAL ANALYSIS APPLIED TO A DYNAMIC STUDY OF A STRUCTURE ***** Javier Fernández, Lutz Hermanns, Alberto Fraile, Enrique Alarcón
Paper 26	ID: 209	OPERATIONAL MODAL ANALYSIS OF A HIGH RISE RC BUILDING AND MODELLING ***** Guillermo Fernandez-Lorenzo, Diego Mercerat, Santisi D'Avila Diego, Etienne Bertrand, Anne Deschamps
Paper 27	ID: 210	THE ROLE OF OPERATIONAL MODAL ANALYSIS IN THE NON-DESTRUCTIVE ASSESSMENT OF AN ITALIAN MONUMENT ***** Carlo Rainieri, Danilo Gargaro, Giovanni Fabbrocino

Technical Session 4 Room ARAMO Wednesday, 13 09:00-10:40	Identification Techniques Chair: S. Gade
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Paper 28	ID: 109	ORDER-BASED MODAL ANALYSIS: A MODAL PARAMETER ESTIMATION TECHNIQUE FOR ROTATING MACHINERIES ***** Emilio Di-Lorenzo, Simone Manzato, Bart Peeters, Frederik Vanhollebeke, Wim Desmet, Francesco Marulo
Paper 29	ID: 213	QUANTIFICATION OF UNCERTAINTES IN MODAL PARAMETER ESTIMATION ON TWO BUILDINGS ***** Iván Muñoz-Díaz, Jaime H. García-Palacios, Christian A. Barrera, José Manuel Soria, Octavio Nieto-Taladriz

Paper 30	ID: 124	OPERATIONAL MODAL ANALYSIS OF STRUCTURES USING A NEW TIME-FREQUENCY DOMAIN APPROACH **** Reza Tarinejad, Majid Damadipour
Paper 31	ID: 107	PARAMETER ESTIMATION ALGORITHMS IN OPERATIONAL MODAL ANALYSIS: A REVIEW ***** Shashank Chauhan
Paper 32	ID: 801	IDENTIFICATION OF THE MODAL MASSES OF AN UAV STRUCTURE IN OPERATIONAL ENVIRONMENT ***** Mario Salvatore Cardinale, Melissa Arras, Giuliano Coppotelli
Technical Session 4 Room DEVA Wednesday, 13 09:00-10:40		Comparison with Traditional Modal Analysis Chair: J. Bienert
Paper 33	ID: 451	DAMPING ESTIMATION FROM OPERATIONAL AND EXPERIMENTAL MODAL ANALYSIS ON A LABORATORY TEST PLATE ***** Esben Orlowitz, Anders Brandt
Paper 34	ID: 301	AUTOMATIC OPERATIONAL MODAL ANALYSIS FOR AEROELASTIC APPLICATIONS ***** Jan Schwochow, Goran Jelicic
Paper 35	ID: 223	INVESTIGATION OF THE INFILL WALL EFFECT ON THE DYNAMIC BEHAVIOUR OF RC FRAMES ***** M. Ömer Timurağaoğlu, Ramazan Livaoglu, Adem Doğangün
Paper 36	ID: 453	AMBIENT VIBRATION RECORDS IN REPRODUCING THE FORCED VIBRATION TEST RESULTS OF A FOUR-STORY REINFORCED CONCRETE BUILDING WITH TWO BASEMENT FLOORS *** Ozan Cem Celik
Paper 37	ID: 602	INVESTIGATION ON THE SENSITIVITY OF SUBSPACE BASED DAMAGE DETECTION TECHNIQUE TO DAMAGE AND NOISE LEVELS ***** Saeid Allahdadian, Carlos Ventura, Palle Andersen, Laurent Mevel, Michael Döhler
	10:40-11:20	Coffee break

Technical Session 5 Room NARANCO Wednesday, 13 11:20-13:00		Applications in Civil Engineering Chair: L. Hermanns
Paper 38	ID: 113	DETERMINATION OF FULL MODAL PROPERTIES AND EFFECTS OF FOUNDATION ROCKING ON THE DYNAMIC CHARACTERISTICS OF TWO HIGH-RISE CONCRETE SHEAR WALL BUILDINGS ***** Salman Soleimani-Dashtaki, Ferya Moayed, Carlos E. Ventura
Paper 39	ID: 226	ANALYTICAL AND EXPERIMENTAL INVESTIGATION OF THE DYNAMIC BEHAVIOR OF A FOOT-BRIDGE ***** Nathalie Rohner, Mylène Devaux, Reto Cantieni
Paper 40	ID: 203	STOCHASTIC MODAL ANALYSIS FOR A REAL OFFSHORE PLATFORM ***** Fushum Liu, Huajun Li, Sau-Lon James Hu
Paper 41	ID: 202	OUTPUT ONLY INVESTIGATION OF THE EFFECT OF POST-TENSIONING FORCE ON NATURAL FREQUENCIES OF POST-TENSIONED CONCRETE BEAMS ***** Darragh Noble, Maria Nogal, Alan John O'Connor, Vikram Pakrashi
Paper 42	ID: 852	EFFECTS OF TIME SYNCHRONIZATION ON OPERATIONAL MODAL ANALYSIS ***** Jaime García-Palacios, Francisco Tirado-Andrés, José Manuel Soria, Iván Muñoz Díaz, Alvaro Araujo
Technical Session 5 Room ARAMO Wednesday, 13 11:20-13:00		Identification Techniques Chair: H. Vold
Paper 43	ID: 123	OPERATIONAL MODAL ANALYSIS TECHNIQUES AND THEIR THEORETICAL AND PRACTICAL ASPECTS: A COMPREHENSIVE REVIEW AND INTRODUCTION ***** Morteza Ghalishooyan, Ahmad Shooshtari
Paper 44	ID: 104	STOCHASTIC MODAL IDENTIFICATION IN THE PRESENCE OF HARMONIC EXCITATIONS ***** Wenlong Yang, Huajun Li, Sau-Lon James Hu, Yao Teng

Paper 45	ID: 101	A MODAL APPROPRIATION BASED METHOD FOR OPERATIONAL MODAL ANALYSIS ***** Maher Abdelghani, Shashank Chauhan
Paper 46	ID: 119	EVALUATION OF DAMPING ESTIMATES IN THE PRESENCE OF CLOSELY SPACED MODES USING OPERATIONAL MODAL ANALYSIS TECHNIQUES ***** Anela Bajric, Rune Brincker, Sebastian Thöns
Paper 47	ID: 551	INTERIOR MODE SELECTION IN THE CRAIG BAMPTON REDUCTION TECHNIQUE BASED ON ENERGY APPROACH ***** Robert Belotti, Ilaria Palomba, Dario Richiedei, Alberto Trevisani
Technical Session 5 Room DEVA Wednesday, 13 11:20-13:00		Model Validation and Model Updating Chair: G. Coppotelli
Paper 48	ID: 505	USING NEURAL NETWORKS FOR F.E. MODEL UPDATING OF STRUCTURES IN OPERATIONAL CONDITIONS ***** F. Santamaría, Melissa Arras, G. Coppotelli
Paper 49	ID: 507	FINITE ELEMENT MODEL UPDATING OF A LIVELY FOOTBRIDGE ***** Norberto Ibán, Javier Castaño, Javier Cara, M. Cacho-Pérez, I. Muñoz, A. Lorenzana
Paper 50	ID: 508	VIBRATION TESTING AND FE MODELLING OF A LIVELY FOOTBRIDGE ***** Eleonora Lai, Carmelo Gentile, Maria Gabriella Mulas
Paper 51	ID: 121	COMPARISON OF MODE SHAPE VECTORS IN OPERATIONAL MODAL ANALYSIS DEALING WITH CLOSELY SPACED MODES ***** Peter Olsen, Rune Brincker
Paper 52	ID: 502	NONLINEAR FINITE ELEMENT MODEL UPDATING OF A TENSILE SURFACE STRUCTURE TO ESTIMATE ITS PRESTRESS LEVEL ***** Javier Fernando Jiménez-Alonso, Javier Fernando, Carlos Palacios Gil, Andres Sáez Pérez
13:00-14:30		Lunch

Technical Session 6 Room NARANCO Wednesday, 13 14:30-15:10		Applications in Mechanical Structures Chair: J. Grosel	
Paper 53	ID: 251	OPERATIONAL MODAL ANALYSIS ON THE POLAR SUPPLY AND RESEARCH VESSEL THE S.A. AGULHAS II ***** Keith Soal, Jörg Bienert, Anriette Bekker	
Paper 54	ID: 255	A HARMONIC PEAK REDUCTION TECHNIQUE FOR OPERATIONAL MODAL ANALYSIS OF ROTATING MACHINERY ***** Jörg Bienert, Palle Andersen, C. Aguirre	
Technical Session 6 Room ARANO Wednesday, 13 14:30-15:10		Identification Techniques Chair: D. Tcherniak	
Paper 55	ID: 110	LEARNING OPERATIONAL MODAL ANALYSIS IN FOUR STEPS ***** Carlo Rainieri, Giovanni Fabbrocino	
Paper 56	ID: 220	IDENTIFICATION OF THE MODAL PROPERTIES OF A SQUAT HISTORIC TOWER FOR THE TUNING OF A FE MODEL ***** Mariella Diaferio, Dora Foti, Nicola Ivan Giannoccaro	
Room ARAMO Wednesday, 13 15:10-16:10		Lecture of Honour Chair: M.L. Aenlle THE ROCK CRUSHER THAT ALSO CRUSHED BEARINGS Håvard Vold	
16:10-16:50		Coffee break	
Tuesday, 13 17:00-23:00		Social Program Bus to Laboral City of Culture (17:00) Visit to Laboral City of Culture& Gijón Tour: (17:30) Conference Dinner "CLUB DE REGATAS": (20:15) Bus return to ABBA Hotel: (23:00)	

THURSDAY, 14 - 2015

Technical Session 7 Room NARANCO Thursday, 14 09:00-09:40	Measurement Techniques Chair: R. Brincker
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Paper 57 ID: 351	EXPERIMENTAL VALIDATION OF PHASE SYNCHRONISATION EFFECTS IN OPTIMISING IMPACT-SYNCHRONOUS TIME AVERAGING ***** Zhi Chao Ong, Mohd. Arif Kor Mohd. Adeb, Anders Brandt
Paper 58 ID: 154	MEASUREMENT OF FREQUENCY RESPONSE FUNCTIONS OF ROTATING SPINDLES ***** Yum Ji Chan, Kuang-Yu Chen

Technical Session 7 Room ARAMO Thursday, 14 09:00-09:40	Model Validation and Model Updating Chair: A. F. Canteli
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Paper 59 ID: 503	AMBIENT VIBRATION TESTING, DYNAMIC IDENTIFICATION AND MODEL UPDATING OF A HISTORICAL BUILDING. CHAPEL OF THE WÜRZBURG RESIDENCE (GERMANY) ***** Pablo Pachón, Víctor Compán, Javier Fdo. Jiménez Alonso
Paper 60 ID: 651	ESTIMATION OF LOCALIZED DYNAMIC LOADS BY MEANS OF SPARSE OPTIMIZATION **** Ali Rezayat, M. El-Kafafy, K. Maes, G. Lombaert, S. Vanlanduit, P. Guillaume

Room ARAMO Thursday, 14 09:40-10:40	Keynote Lecture Chair: M. Aenlle OMA ON OPERATING WIND TURBINES: CHALLENGES AND SOLUTIONS Dmitri Tcherniak
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10:40-11:20 Coffee break

Technical Session 8 Room NARANCO Thursday, 14 11:20-12:40		Measurement Techniques Chair: A. Brandt
Paper 61	ID: 151	AVERAGED COV-DRIVEN SUBSPACE IDENTIFICATION FOR MODAL ANALYSIS OF A MODIFIED TROPOSKIEN BLADE WITH DISPLACEMENT MEASUREMENT ***** Nadia Najafi, Mohammad Esmail Aryaee Panah
Paper 62	ID: 105	COMPARISON OF SIMULTANEOUS AND MULTI-SETUP MEASUREMENT STRATEGIES IN OPERATIONAL MODAL ANALYSIS ***** Esben Orlowitz, Palle Andersen, Anders Brandt
Paper 63	ID: 152	RADAR-BASED OPERATIONAL MODAL TESTING OF LARGE STRUCTURES: TWO CASE STUDIES IN SPAIN ***** Guido Luzi, Carmelo Gentile, M. Crosetto
Paper 64	ID: 153	DYNAMIC TESTING OF A HISTORICAL SLENDER BUILDING USING ACCELEROMETERS AND RADAR ***** Mariella Diaferio, Dora Foti, Carmelo Gentile, N.Ivan Giannoccaro, Antonella Saisi
Technical Session 8 Room ARAMO Thursday, 14 11:20-12:40		Wind turbines Chair: R. Cantieni
Paper 65	ID: 112	EXPERIMENTAL CHARACTERIZATION OF AN OPERATING VESTAS V27 WIND TURBINE USING HARMONIC POWER SPECTRA AND OMA SSI **** Dmitri Tcherniak, Matthew S. Allen
Paper 66	ID: 108	COMPARATIVE STUDY OF OMA APPLIED TO EXPERIMENTAL AND SIMULATED DATA FROM AN OPERATING VESTAS V27 WIND TURBINE **** Oscar Ramírez, Dmitri Tcherniak, Gunner Chr. Larsen
Paper 67	ID: 252	AUTOMATED OPERATIONAL MODAL ANALYSIS ON AN OFFSHORE WIND TURBINE: CHALLENGES RESULTS AND OPPORTUNITIES ***** Wout Weijtjens, Gert De Sitter, C. Devriendt, Patrick Guillaume

Paper 68 **AUTOMATED MODAL TRACKING IN A 2 MW ONSHORE WIND TURBINE**
ID: 862 Gustavo Oliveira, Álvaro Cunha, Filipe Magalhães, Elsa Caetano

Room ARAMO
Thursday, 14 **Closing Session of IOMAC 2015**
12:40-13:00

13:00-14:30 Lunch

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