

The background of the page features a stylized graphic of tree trunks, represented by several vertical, slightly curved black lines of varying thicknesses that create a sense of depth and texture.

W C T E

**WORLD CONFERENCE ON
TIMBER ENGINEERING**

2 0 1 0

Conference Program

ACCREDITATION

Room Foyer

TIME

9:00/20:00 Accreditation of the participants at the desk in the foyer

19:00/21:00 Welcome drink

Monday 21

ACCREDITATION

Room Foyer

TIME

8:00-9:00	Accreditation of the participants at the desk in the foyer
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GENERAL SESSION • EARLY MORNING

Room Rovereto

TIME

PRESENTER

9:00	Opening + Welcome	Ario Ceccotti
9:05	Program + Housekeeping	Jan-Willem van de Kuilen
9:10	Welcome address	Local Authority
9:15	Keynote	Hans Blass
10:00	Coffee Break	

PARALLEL SESSIONS • MIDMORNING

Room Gardalake Session 1 **JOINTS AND FASTENERS 1** Chair: Pierre Quenneville

TIME

ID

TITLE

AUTHORS

10:40	197	The Load-Deflection Behaviour of Halved Joints	Bernd Köck, Stefan M. Holzer
11:00	193	Experimental and Numerical Evaluation of Notched Timber-Concrete Joints Mechanical Behavior	Sandra Monteiro, Alfredo Dias, João Negrão
11:20	180	Cyclic Performance of a Viscoelastic Connection for Use in Wood-Frame and Steel-Frame Gypsum Shearwalls	David W. Dinehart, Kristin A. Leese, Sarah Patterson
11:40	152	The Use of Adhesive Bulbs in the Inner End of Drills in Order to Improve the Axial Strength of Steel Threaded Bars Glued-In Timber	Javier Estévez, Dolores Otero, Emilio Martín, José A. Vázquez
12:00	147	Comparative Study of Fiberglass Reinforced Timber Joints Versus Bamboo Reinforced Timber Joints	César Echavarría, Claudia de la Cruz, Julio Sánchez

Room Dolomite Session 2 **GRADING AND STRUCTURAL TIMBER 1** Chair: Michele Brunetti

TIME

ID

TITLE

AUTHORS

10:40	828	Revision of Australian MGP Stress Grades 2009	Geoffrey N. Boughton, Peter M. Juniper
11:00	812	Bending Strength Adjustments for Moisture Content for Chinese Fir Structural Lumber	Haibin Zhou, Haiqing Ren, Jianxiong Lv, Jinghui Jiang, Xunshun Wang
11:20	680	Real Time Quality Evaluation of Structural Timber	Markus Deublein, Raimund Mauritz, Jochen Köhler
11:40	648	Grading and Testing of Maritime Pine Roundwood	Telmo F. M. Morgado, José Saporiti Machado, Alfredo M. P. G. Dias, Helena Cruz, João N. A. Rodrigues
12:00	646	Predicting the Mechanical Behaviour of Solid Pine Timber Elements Through Non and Semi-Destructive Methods	José Saporiti Machado, Pedro Palma

Room Trento Session 3 **FINGER JOINTS AND GLUED LAMINATED TIMBER 1** Chair: Erik Serrano

TIME

ID

TITLE

AUTHORS

10:40	58	Shear Strength of Glulam Beams under Varying Humidity Conditions	Tomi Toratti, Tero Sundström, Ari Kevarinmäki
11:20	775	Strength Estimation and Reinforcement of Glue-Laminated Timber Beams with Circular Through-Hole	Kazumi Hijikata, Hideki Idota, Naoko Tsujimoto
11:40	653	Structural Behavior of Glued Laminated Guadua Bamboo as a Construction Material	Juan F. Correal, Fernando Ramirez, Soffy Gonzalez, Jessica Camacho

12:00	616	Evaluation of Finger-Jointed Laminae for Glulam Timber by Acoustic Emission. Development of Evaluation System for Finger-Jointed Laminae with Starved Joints	Takeshi Ohuchi, Eri Sato, Yoshiyasu Fujimoto
Room Verona Session 4 COMPOSITE STRUCTURES 1 Chair: Mario Fontana			
TIME	ID	TITLE	AUTHORS
10:40	844	The Effect of Moisture and Temperature Variations on Timber-Concrete Composite Beams	Massimo Fragiaco, Jörg Schänzlin
11:00	736	Timber-Concrete Composite Structures with Prefabricated FRC Slab	Roberto Crocetti, Tiziano Sartori, Mathias Flansbjerg
11:20	704	Non Linear Modelling of Timber-Concrete Composite Structures	Alfredo M. P. G. Dias
11:40	676	Development of Timber Concrete Composite Flooring in Australia and New Zealand	Keith Crews, Christophe Gerber, Salvatorangelo Agus, Matteo Foscoliano
12:00	818	Load Bearing and Stiffening Timber-Glass-Composites (TGC)	Wolfgang Winter, Werner Hochhauser, Klaus Kreher
Room Venezia Session 5 DESIGN AND ENGINEERING TOOLS 1 Chair: David Rosowsky			
TIME	ID	TITLE	AUTHORS
10:40	486	Including Moisture Induced Stresses in the Safety Format of Timber Structures	Staffan Svensson, Jochen Köhler
11:00	707	Impact of Hurricane Katrina on Wood Frame Construction Standards in the U.S. Gulf Coast Region	Vijaya Gopu, Marc Levitan
11:20	703	Critical Research Needs Identified by the Asce Workshop on Wood Engineering Challenges in the New Millennium	Vijaya Gopu, Rakesh Gupta, John W. van de Lindt
11:40	631	Proposal of Shear Strength Formula Including Proportion Effects of Shear Planes	Kazuhiro Yamaguchi, Yoshihiro Kobayashi, Masahiro Inayama
12:00	623	Consideration on Design Models of Timber Structures	Lilita Ozola
Room Riva Session 6 ENGINEERING WOOD PRODUCTS 1 Chair: Frank Lam			
TIME	ID	TITLE	AUTHORS
10:40	839	Lateral and Withdrawal Resistance of Typical CLT Connections	Williams Muñoz, Mohammad Mohammad, Sylvain Gagnon
11:00	731	Timber Structures for Cottages in the Mountains, Olpererhütte Realized with Cross Laminated Timber	Heinrich Kreuzinger
11:20	550	Experimental Tests on Timber-to-Cross Lam Composite Section Beams	Alessandra Gubana
11:40	549	Cross Laminated Timber (CLT) – Reinforcements with Self-Tapping Screws	Peter Mestek, Stefan Winter
12:00	420	Verification of CLT-Plates under Loads in Plane	Thomas Bogensperger, Thomas Moosbrugger, Gregor Silly
12:20	Lunch break		

PARALLEL SESSIONS • AFTERNOON

Room Gardalake Session 7 JOINTS AND FASTENERS 2 Chair: Rainer Görlacher			
TIME	ID	TITLE	AUTHORS
14:00	481	Withdrawal Capacity of Screws in European Ash (Fraxinus Excelsior L.)	Ulrich Hübner, Mathias Rasser, Gerhard Schickhofer
14:20	473	Application Criteria for the Benefit of Plasticity within Timber Structures Due to Connection Ductility	Frank Brühl, Ulrike Kuhlmann
14:40	439	Effect of Moisture Content on Performance of Dowel-Type Connection	Chul-Ki Kim, Jung-Kwon Oh, Jun-Jae Lee
15:00	837	Stiffness and Ductility of Bolted Connections	Mohammad Mohammad, William Muñoz Toro, Pierre Quenneville, Alexander Salenikovitch
15:20	709	Influence of Wood Densification on Withdrawal Strength of Fasteners in Eastern Cottonwood (Populus Deltoides)	Mehrab Madhoushi, Mohammad Gray, Taghi Tabarsa

Room Dolomite			
Session 8 GRADING AND STRUCTURAL TIMBER 2 Chair: Charlotte Bengtsson			
TIME	ID	TITLE	AUTHORS
14:00	596	Mechanical Stress Grading of Larch Sawn Timber from Northeastern China	Zhao-hui Wang, Hai-qing Ren, Wan-li Lu, Ke-zhen Liu
14:20	476	Growth Areas in Europe with Regard to Different Wood Species and Grading Principles	Peter Stapel, Jan-Willem van de Kuilen
14:40	468	Machine Grading of Italian Structural Timber: Preliminary Results on Different Wood Species	Michela Nocetti, Martin Bacher, Michele Brunetti, Alan Crivellaro, Jan-Willem van de Kuilen
15:00	438	Effect of Using a Hot-Press to Suppress Surface Checks in Sugi Boxed Heart Square Timbers During the Drying Process	Akihiro Matsumoto, Hisato Oda, Takanori Arima, Noboru Fujimoto
15:20	718	Assessment of Local Timber Defects During Testing and Grading as Influenced by Machine Approval Procedure	Andreas Rais, Peter Stapel, Jan-Willem van de Kuilen
Room Trento			
Session 9 FINGER JOINTS AND GLUED LAMINATED TIMBER 2 Chair: Shiro Aratake			
TIME	ID	TITLE	AUTHORS
14:00	519	Enhanced Reliability of Finger-Joints by Means of Advanced Proof Loading	Gerhard Dill-Langer, Consolata Russelli, Simon Aicher
14:20	492	Applicability of Low Graded Glued Laminated Beam to Japanese Conventional House	Hideki Aoi, Kenji Aoki, Ken-ichi Sugimoto, Atsushi Miyatake, Fumio Kamiya
14:40	491	Gluing of European Beech (<i>Fagus sylvatica</i> L.) and Douglas Fir (<i>Pseudotsuga menziesii</i> Mirb.) for Load Bearing Timber Structures	Michael Schmidt, Markus Knorz
15:00	487	Influence of Creep on the Lateral Torsional Buckling of Glued Laminated Timber Girders	Reiner Hofmann, Ulrike Kuhlmann
15:20	455	Ultimate Limit State Load Test of Stress-Laminated-Timber Deck	Kristoffer Karlsson, Roberto Crocetti, Robert Kliger
Room Verona			
Session 10 COMPOSITE STRUCTURES 2 Chair: Alfredo Dias			
TIME	ID	TITLE	AUTHORS
14:00	368	Experimental Performance of LVL-Concrete Composite Floor Beams	David Yeoh, Massimo Fragiaco, Bruce Deam, Andrew H. Buchanan
14:20	259	Vibration Susceptibility of Multi-Span LVL-Concrete Composite Floors	Massimo Fragiaco, Nor Hayati Abd. Ghafar, Bruce Deam
14:40	199	Time-Dependent Behavior of Composite Wood-Concrete Bridges Made from Salvaged Utility Poles	Massimo Fragiaco, Jenő Balogh, Nathan Miller, Richard Gutkowski
15:00	196	Variable Prestressing of FRP-Reinforced Glulam Beams: Methodology and Behavior	Habib J. Dagher, Howard Gray, William G. Davids, Rodrigo Silva-Henriquez, Jacques Nader
15:20	222	Performance of Wood-Based Panel I-Beam Components	Mizi Fan
Room Venezia			
Session 11 DESIGN AND ENGINEERING TOOLS 2 Chair: Vijaya Gopu			
TIME	ID	TITLE	AUTHORS
14:00	534	Systems Based Approach to Improving the Safety of Residential Wood Decks and Deck Guardrails	Joseph R. Loferski, Frank Woeste
14:20	60	Global Test Standards and Code Design Rules for Compressive Strength Perpendicular to Grain	Ad J.M. Leijten, André J.M. Jorissen
14:40	835	Reliability Assessment of Roof Sheathing Performance in Light Wood Frame Structures Subjected to Wind Pressure	Maral Amini, Bohumil Kasal
15:00	239	Performance-Based Wind Engineering of Light-Framed Wood Residential Structural Systems	David O. Prevatt, Peter L. Datin, Akwasi F. Mensah, Kenneth Martin, Rakesh Gupta, Dao Thang, John W. van de Lindt
15:20	77	Toward a Performance-Based Procedure for Direct Displacement Design of Engineered Woodframe Structures	Yue Wang, David V. Rosowsky, Weichiang Pang

Room Riva		Session 12 ENGINEERING WOOD PRODUCTS 2 Chair: Gerhard Schickhofer	
TIME	ID	TITLE	AUTHORS
14:00	252	Cross Laminated Timber: a Multi-Layer, Shear Compliant Plate and its Mechanical Behavior	Reinhard Stürzenbecher, Karin Hofstetter, Josef Eberhardsteiner
14:20	150	Non Destructive Evaluation of Stiffness Properties of Cross-Laminated Solid Wood Panels	Arne Gülzow, René Steiger, Daniel Gsell
14:40	82	Compression Strength Perpendicular to Grain in Cross-Laminated Timber (CLT)	Erik Serrano, Bertil Enquist
15:00	572	Enhanced Performance of Longitudinally Post-Tensioned Long-Span LVL Beams	Alessandro Palermo, Stefano Pampanin, David Carradine, Andrew H. Buchanan, Bruno Dal Lago, Claudio Dibenedetto, Simona Giorgini, Paola Ronca
15:20	560	Development of Reinforce Method for Bending Stiffness of Compound Beam Using Pin-Keyed Joint. Effect of Pin-Key's Diameter	Takuro Mori, Munekazu Minami, Kiho Jung, Akihisa Kitamori, Kohei Komatsu
15:40	Coffee Break		
Room Gardalake		Session 13 JOINTS AND FASTENERS 3 Chair: Hugh Morris	
TIME	ID	TITLE	AUTHORS
16:20	59	Cantilevered Glulam Beam Fastened by Long Threaded Steel Rods	Pål Ellingsbø, Kjell Arne Malo
16:40	796	Experimental and Numerical Analyses of Single Double Shear Dowel-Type Timber Joints	Marc Oudjene, Mourad Khelifa
17:00	781	Embedment Tests Parallel-to-Grain and Ductility in Tropical Hardwood Species	Carmen Sandhaas, Jan-Willem van de Kuilen, Hans-Joachim Blaß, Geert Ravenshorst
17:20	414	Damage Detection in Bolted Timber Connections Using Acoustic Emission Monitoring	Seiirhiro Ukyo, Masahiko Karube, Masaki Harada, Hideki Aoi
17:40	706	Preliminary Study of Sheathing-to-Framing Connections with Glued Laminated Guadua Bamboo Panels	Sebastián Varela, Juan F. Correal, Fernando Ramírez
Room Dolomite		Session 14 GRADING AND STRUCTURAL TIMBER 3 Chair: Bo Källsner	
TIME	ID	TITLE	AUTHORS
16:20	330	Use of Artificial Neural Networks in Timber Engineering: Calculating Modulus of Elasticity Using Non-Destructive Testing	Francisco García Fernández, Luis García Esteban, Paloma de Palacios de Palacios, Antonio Guindeo Casasús
16:40	307	Evaluation of Shear Strength of Timber with Full-Scale Block Shear Method	Hirofumi Ido, Hirofumi Nagao, Hideo Kato
17:00	283	Approach of Dynamic Production Settings for Machine Strength Grading	Alpo Ranta-Maunus, Goran Turk
17:20	254	Investigation into the Physical Properties of Reclaimed Timber Beams, to Generate a Simplified Method of Regrading for Construction	Michael Smith
17:40	801	Density Calibration Using X-Ray Equipment for in-Situ Assessment of Timber Structures	Thomas Krugłowa, Ylva Sandin, Robert Kliger
Room Trento		Session 15 FINGER JOINTS AND GLUED LAMINATED TIMBER 3 Chair: Naresworo Nugroho	
TIME	ID	TITLE	AUTHORS
16:20	410	Long Term Tests of Glulam Beams in Sheltered Outdoor Environment	Tomaž Pazlar, Jelena Srpčič, Simon Schnabl, Stane Srpčič
16:40	409	Potential of Short Knot-Free Board Sections for Glued Laminated Timber Production	Elisabet Kastner, Reinhard Brandner, Gerhard Schickhofer
17:00	365	Explore Novel Ways to Strengthen Glulam Beams by Using Compressed Japanese Cedar	Buan Anshari, Zhongwei Guan, Kohei Komatsu, Akihisa Kitamori, Kiho Jung
17:20	303	Application of Glulam Beam Girders with External Pre-Stressing	Miljenko Haiman, Krunoslav Pavković, Boris Baljkas
17:40	81	Bending Creep of Glulam Using Sugi Laminae with Extremely Low Young's Modulus for Inner Layers	Shiro Aratake, Takanori Arima, Hideki Morita

Room Verona			
Session 16 COMPOSITE STRUCTURES 3 Chair: Keith Crews			
TIME	ID	TITLE	AUTHORS
16:20	174	Static and Dynamic (Vibration) Performance of Composite Beams with Prefabricated Concrete Slab	Elzbieta Lukaszewska, Massimo Fragiocomo
16:40	98	Development of Adhesive Bonded Timber-UHPC Composites – Experimental and Theoretical Investigations	Martin Schäfers, Werner Seim
17:00	87	Creep Response of Glulam Reinforced by a Novel Pre-Stressed FRP-Wood Composite System	Mohammad Yahyaei Moayyed, Farid Taheri
17:20	851	Numerical Analysis of CFRP-Reinforced Wooden Beams under Bending	Jerzy Jasienko, Tomasz Nowak, Dariusz Czepizak
17:40	52	Numerical Modeling Strategy for Analyzing the Behavior of Shear Connectors in Wood-Concrete Composite Systems	Carlito Calil Junior, Julio Cesar Molina
Room Venezia			
Session 17 CULTURAL HERITAGE ASSESSMENT 1 Chair: Maurizio Piazza			
TIME	ID	TITLE	AUTHORS
16:20	66	The Structural System and Analysis of Timber Construction Built in “Great Mosque”, Turkey	Nimet Öztank
16:40	804	Analysis of Global Behaviour of the Row-Trusses of the Arsenale of Venice	Giulia Bettiol, Maria Rosa Valluzzi, Enrico Garbin, Claudio Menichelli
17:00	741	Rilem TC 215 In-Situ Assessment of Structural Timber: Report on Activities and Application of Assessment Methods	Thomas Tannert, Bohumil Kasal, Ronald Anthony
17:20	710	School of Taghavi: a Historical Timber Structure in Iran	Mehrab Madhoushi, Javid Eimanian
17:40	698	Mechanical Analysis of Lateral Loading Behavior on Japanese Traditional Frame Structure Depending on the Vertical Load	Akihisa Kitamori, Kiho Jung, Ivon Hassel, WenShao Chang, Kohei Komatsu, Yoshiyuki Suzuki
Room Riva			
Session 18 ENGINEERING WOOD PRODUCTS 3 Chair: Robert Kliger			
TIME	ID	TITLE	AUTHORS
16:20	527	Effect of Heat on the Mechanical Properties of Wood and Wood Composite	Arijit Sinha, Rakesh Gupta, John Nairn
16:40	507	Length Effects in the Orthotropic Directions of Structural Composite Lumber	Peggi L. Clouston, Sanjay Arwade, Meghan Krupka
17:00	471	Development of Compressed Cross-Lapped Corner Members for Rigid Frames	Yasunobu Noda, Kohei Komatsu, Naoyuki Furuta
17:20	442	Load-Carrying Behavior of Fiber Reinforced Wood Profiles	Andreas Heiduschke, Peer Haller
17:40	335	Numerical Investigations of the Load Carrying Capacity of Laminated Veneer Lumber (LVL) Joists with Holes	Manoochehr Ardalany, Bruce L. Deam, Massimo Fragiocomo

WELCOME CEREMONY

Hotel du Lac in Riva del Garda

TIME	
19:00	Welcome Ceremony

Tuesday 22

PARALLEL SESSIONS • MORNING

Room Gardalake			
Session 19 JOINTS AND FASTENERS 4 Chair: Joseph Loferski			
TIME	ID	TITLE	AUTHORS
8:30	705	Moment Joints in Timber Frames Using Glued-In Steel Rods: Experimental Investigation of Long Term Performance.	Massimo Fragiaco, Mark Batchelar, Chris Wallington, Andy Buchanan
8:50	635	Fundamental Research into Adhesive Screw Bolted for Glue Laminated Timber Connection	Hiroki Fukazawa, Keiichi Tsubouchi, Jyunnichi Motooka, Mutsuo Amemiya, Hiroyuki Noguchi
9:10	634	Evaluation of the Neeswood Capstone Test Specimen Using Japanese Building Codes	Kazuki Tachibana, Hiroshi Isoda, Tomoya Okazaki, Mikio Koshihara, Hidemaru Shimizu, John W. van de Lindt, Steven E. Pryor
9:30	626	Estimation Method on Stiffness and Strength of Single Shearing Screw Joints with Steel Side Plates	Kenji Kobayashi, Masahiro Inayama, Naoto Ando
9:50	619	High Performing Jointing Technique Using Glued-In Bars	Ernst Gehri
Room Dolomite			
Session 20 GRADING AND STRUCTURAL TIMBER 4 Chair: David Kretschmann			
TIME	ID	TITLE	AUTHORS
8:30	232	Comparison between Tensile and Compressive Young's Modulus of Structural Lumber	Kwang-Mo Kim, Kug-Bo Shim
8:50	229	Tensile Proof Loading – Another Way to a Complete Quality Assurance	Andreas Eiser, Gerhard Schickhofer
9:10	212	Portable Hardness Tester for Timber Classification	Adriano Ballarin, Pedro Almeida, Hernando Lara Palma, Roberto Colenci
9:30	191	Machine Strength Grading – “Output Control” as a Method for Production Control	Rune Ziethén, Charlotte Bengtsson, Anders Lycken
9:50	144	Prediction of Timber Bending Strength Using Dynamic Excitation of Bending Modes	Anders Olsson, Jan Oscarsson, Marie Johansson, Bo Källsner
Room Trento			
Session 21 FINGER JOINTS AND GLUED LAMINATED TIMBER 4 Chair: Alpo Ranta-Maunus			
TIME	ID	TITLE	AUTHORS
8:30	284	Simulation of Residual Stress in Curved Glulam Beam During Manufacture	Enchun Zhu, Huazhang Zhou
8:50	208	Glued Laminated Timber in Bending: Thoughts, Experiments, Models and Verification	Reinhard Brandner, Gerhard Schickhofer
9:10	188	Shear Characteristics of Steel-Plate-Inserted Glulam Beams	Humihiko Gotou, Daikokuya Masahide, Sasaki Takanobu, Hasebe Kaoru
9:30	107	System Effects in Continuous Glulam Beams	Matthias Frese
9:50	288	A Computational Method for Crack Growth in Glulam under Variable Humidity	Antonio Lorenzo Mendicino, Stefania Fortino, Maximilian Henning, Gerhard Dill-Langer
Room Verona			
Session 22 ROAD AND HYDRAULIC STRUCTURES 1 Chair: Erik Aasheim			
TIME	ID	TITLE	AUTHORS
8:30	565	Nondestructive Evaluation of Timber Highway Guardrail Posts	James P. Wacker, Xiping Wang, David E. Kretschmann, Douglas R. Rammer
8:50	457	Performance Evaluation of Hybrid Beam Consisted of Timber and Steel for Guardrail	Jin-Ah Lim, Chun-young Park, Hyung-kun Kim, Hwanmyeong Yeo, Jun-jae Lee
9:10	647	Dynamic Analysis Of The Vibrations On A Timber Footbridge Through A Reduced Model	Antonio Alves Dias, Pedro Gutemberg de Alcântara Segundinho, Marcelo Rodrigo Carreira

9:30	451	Fatigue Strength of Timber-Concrete Composite Bridges: Determination of a S-N-Line for the Grooved Connection and the "X-Connector"	Pietro Aldi, Ulrike Kuhlmann
Room Venezia Session 23 CULTURAL HERITAGE ASSESSMENT 2 Chair: Borjen Yeh			
TIME	ID	TITLE	AUTHORS
8:30	677	Shake Table Tests on Frames with Hanging Walls Used in Japanese Traditional Wood Houses	Naohito Kawai, Hiroshi Isoda, Takafumi Nakagawa, Tadashi Mikoshiba, Minoru Okabe
8:50	638	Characteristics and Diagnosing Technology of Biodegradation in Wooden Historical Buildings. A Case Study on Amida-Do in Higashi-Hongan-Ji Temple in Kyoto	Yoshihisa Fujii, Yuko Fujiwara, Rika Kigawa, Tatsuru Suda, Yoshiyuki Suzuki
9:10	636	Traditional Wooden Buildings in a Rural District Town Called Kiragawa-Cho	Yasuhiro Hayashi, Chiaki Watanabe, Noriko Takiyama, Toshiyuki Tai, Yu Hasebe
9:30	602	Horyuji-Kondo: Revaluation of the Oldest Timber-Space-Frame 1300 Years Ago	Tsugunori Kimoto, Masahiro Inayama
9:50	588	Evaluation of Structural Performance of Existing Traditional Timber Structures in Japan by Microtremor Measurements	Kazuki Chiba, Kaori Fujita
Room Riva Session 24 SEISMIC AND RACKING DESIGN 1 Chair: Andy Buchanan			
TIME	ID	TITLE	AUTHORS
8:30	845	Seismic Vibration Reduction Design for Timber Frame Building Using Visco-Elastic Damper	Wuchuan Pu, Kazuhiko Kasai
8:50	817	Shake Table Tests of Three-Story Spatial Timber Frame with Moment Connections	Bohumil Kasal, Andreas Heiduschke, Stanislav Pospisil, Shota Urushadze
9:10	809	Experimental and Theoretical Report of the Seismic Behaviour of a Wood Framed Construction System	Elia Terzi
9:30	780	Comparison with Measuring Method of Internal Story Drift on Shaking Table Test of 7 Story X-lam Building	Minoru Okabe, Ario Ceccotti, Motoi Yasumura, Chikahiro Minowa, Naohito Kawai, Carmen Sandhaas, Hidemaru Shimizu
9:50	771	Tests and Numerical Models for Shear-Walls with Various Layers	Mohammed Noory, Ian Smith, Andi Asiz
10:10	Coffee Break		
Room Gardalake Session 25 JOINTS AND FASTENERS 5 Chair: João Negrão			
TIME	ID	TITLE	AUTHORS
10:50	586	Experimental Study on Pull-Out Strength of Mortise-Tenon Joint with Pin Subjected to Bending Moment	Masato Nakao, Masami Gotou, Yoshiyuki Suzuki
11:10	571	Effect of Moisture on the Performance of Bolted Connections in Timber Structures	Alexander Salenikovitch, Baptiste Legras, Mohammad Mohammad, Pierre Quenneville
11:30	570	Reduced Edge Distances in Bolted Timber Moment Connections with Perpendicular to Grain Reinforcements	Maik Gehloff, Maximilian Closen, Frank Lam
11:50	561	Moment Capacity and Stiffness of Web-to-Chord Plated Truss Joints	Stuart Lewis, Matt Vinson
12:10	558	Rotational Stiffness Guideline for Analysis of Metal Plate Connected Wood Trusses	Matt Vinson, Stuart Lewis
Room Dolomite Session 26 GRADING AND STRUCTURAL TIMBER 5 Chair: Geoff Boughton			
TIME	ID	TITLE	AUTHORS
10:50	131	Multi-Scale Study of the Variability in Softwood Transverse Elasticity	Pierre Simon, Hubert Maigre, Loane Bigorgne, Dominique Eyheramendy, Jean-François Jullien
11:10	42	Thermally Modified Beechwood as a Structural Material: Allocation to European Strengthclasses and Relevant Grading Procedures	Robert Widmann, Wilfried Beikircher

11:30	824	Comparison of Methods of Strength Classification of (Tropical) Hardwood Timber	Geert Ravenshorst, Jan-Willem van de Kuilen
11:50	716	The Effect of Changing Slope of Grain on Ash, Maple and Yellow Birch Bending Strength	David E Kretschmann, James J. Bridwell, Tim C. Nelson
12:10	849	Bending Properties and Visual Grade of Chinese Fir Plantation Dimension Lumber: Effect of Pith and Growth Ring Width	Jinghui Jiang, Jianxiong Lu, Haiqing Ren, Long Chao
Room Trento Session 27 FINGER JOINTS AND GLUED LAMINATED TIMBER 5 Chair: Takanori Arima			
TIME	ID	TITLE	AUTHORS
10:50	469	Numerical Modeling of FRP Plate Reinforced Glulam	Gary Raftery, Annette M. Harte
11:10	71	Comparison of API, RF and MUF Adhesives Using a Draft Australian / New Zealand Standard	Bryan Walford
11:30	65	Unlocking the Secret of Finger-Joint Strength – the Significant Correlation between Finger-Joint Strength and Glue Spread Rate	Lin Hu, Richard Desjardins
11:50	56	Super Glulam: a Flexible Adhesive Layer Boosts the Bending Resistance of Glulam	Maurice Brunner, Martin Lehmann, Sebastian Kraft, Urs Fankhauser, Klaus Richter
12:10	54	Glulam Cross Arms Using Reforested Wood: an Efficient Engineering Material	Claudio Jose dos Santos, Carlito Calil Jr, Antonio Alves Dias, Einar Pires de Lima
Room Verona Session 28 ROAD AND HYDRAULIC STRUCTURES 2 Chair: Naohito Kawai			
TIME	ID	TITLE	AUTHORS
10:50	332	The First Timber-Concrete Composite Road Bridge in Germany	Karl Rautenstrauch, Jens Mueller, Antje Simon
11:10	262	Destructive Loading Test of a Rebuilt Wooden Bridge Served for 13 Years	Karube Masahiko, Hayashi Tomoyuki, Kato Hideo, Miyatake Atsushi, Shindou Kenta, Aoki Kenji, Fujita Kazuhiko
11:30	214	Fatigue of Single Span Wood-Concrete-Composite Bridges	Leander Bathon, Oliver Bletz-Mühdorfer
11:50	162	Vibration and Damping Behaviour of a Cable-Stayed Timber Deck Bridge with Asphalt Pavement	René Steiger, Sandy Schubert, Arne Gülzow, Martin Hugener, Daniel Gsell
12:10	78	Serviceability Assessment of a Wooden Trough Bridge by Static and Dynamic Tests	Glauco Feltrin, René Steiger, Daniel Gsell, Arne Gülzow, William Wilson
Room Venezia Session 29 CULTURAL HERITAGE ASSESSMENT 3 Chair: Jelena Srpčič			
TIME	ID	TITLE	AUTHORS
10:50	381	Observation of Wind and Earthquake Responses of National Heritage Five Story Wooden Pagoda	Chikahiro Minowa, Naohito Kawai, Hideyuki Maekawa, Kazuhiko Nitto, Toshikazu Hanazato, Yasushi Niitsu
11:10	309	Finite Element Modelling Of The Structural Performance Of Dou-Gong Brackets Of Yingxian Wood Pagoda	Enchun Zhu, Zhiyong Chen, Jinglong Pan, Linan Wang
11:30	203	In Situ Assessments of Wood in Existing Structures Using Coaxial Distributions of Screw Withdrawals	Nobuyoshi Yamaguchi, Hirofumi Sakuma
11:50	154	Effects of Tenon Depths and Bolt Constraint Conditions on the Mechanical Behavior of Semi-Rigid Joints of Wooden Historical Buildings	Lang-Dong Lin, Yeou-Fong Li, Ming-Jer Tsai, Cheng-Nan Liao, Jenn-Hui Tsai
12:10	105	In Situ Non-Destructive Density Estimation for the Assessment of Existing Timber Structures	Guillermo Íñiguez, Francisco Arriaga, Miguel Esteban, Ignacio Bobadilla, Gonzalez Carlos, Roberto Martinez
Room Riva Session 30 SEISMIC AND RACKING DESIGN 2 Chair: Rakesh Gupta			
TIME	ID	TITLE	AUTHORS
10:50	753	Performance of Wood-Frame Construction in Seismic Event – a Field Survey of the May 12 Wenchuan Earthquake	Chun Ni, Hans Rainer, Ghasan Doudak, Haiyan Zhang, Helen Guo
11:10	730	Effect of Form Change in Sill Plates on Shear Wall Performance	J. Daniel Dolan, Micheal Wolcott, Kristin Du Chateau, Jason O'Dell, Sean Johnson
11:30	702	Racking Resistance of Panel-Sheathed Shear Walls with Opening	Motoi Yasumura
11:50	688	Study on Seismic Loading on Wooden Buildings – Weight Measurement of Full Scale Wooden Houses	Hidemaru Shimizu, Izumi Nakamura, Chikahiro Minowa

12:10	684	Earthquake Resistant Diagnose on Wood School Buildings in Hyogo Prefecture, Japan	Yasuhiro Araki, Azusa Ito, Mototsugu Tabuchi
12:30	Lunch Break		
PARALLEL SESSIONS • AFTERNOON			
Room Gardalake Session 31 JOINTS AND FASTENERS 6 Chair: Moon-Jae Park			
TIME	ID	TITLE	AUTHORS
14:00	553	Pull-Out Strength of Bar Glued-In-Joints	Gattesco Natalino, Alessandra Gubana, Manuela Buttazzi
14:20	551	Cyclic Behavior of Glued-In-Joints under Bending Moments	Gattesco Natalino, Alessandra Gubana, Manuela Buttazzi
14:40	485	Characteristics of Lumber-to-Lumber Framing Connections in Light-Frame Wood Structures	Andi Asiz, Lina Zhou, Ying Hei Chui
15:00	484	Recommendations for Design of Anchoring Devices for Bottom Rails in Partially Anchored Timber Frame Shear Walls	Ulf Arne Girhammar, Bo Källsner, Per-Anders Daerga
15:20	482	Load Bearing and Optimization Potential of Self-Tapping Wood Screws	Gernot Pirnbacher, Gerhard Schickhofer
Room Dolomite Session 32 MECHANICAL MODELLING 1 Chair: Ulrike Kuhlmann			
TIME	ID	TITLE	AUTHORS
14:00	453	Modelling the Performance of Timber Structures – Recent Findings and Future Challenges	Jochen Köhler
14:20	161	A Three-Dimensional Moisture-Stress Fem Analysis For Timber Structures	Stefania Fortino, Tomi Toratti
14:40	721	Robustness Analysis of Timber Truss Structure	Vlatka Rajčić, Dean Čizmar, Poul Henning Kirkegaard, John Dalsgaard Sørensen
15:00	737	Robustness of Secondary Structures in Wide-Span Timber Structures	Philipp Dietsch, Stefan Winter
15:20	840	Evaluation of Failure Criteria in Wood Members	José M. Cabrero, Kifle G. Gebremedhin
Room Trento Session 33 ENVIRONMENTAL IMPACT 1 Chair: Michael Flach			
TIME	ID	TITLE	AUTHORS
14:00	842	Carbon Footprint of Multi-Storey Timber Buildings Compared with Conventional Materials	Stephen John, Nicolas Perez, Andrew H. Buchanan
14:20	499	Tes EnergyFaçade – Sustainability and Environmental Impact	Stephan Ott, Stefan Winter
14:40	627	The Renewable Sources Materials Incidence of on Building Performance: the Wood Case Study	Valeria Marta Rocco, Teresa Pochettino, Andrea Moro
15:00	733	Simple and High-Tech Structures in Timber for Sustainable Eco-Balance	Julius Natterer, Yu-Hsiang Yeh
Room Verona Session 34 BUILDING SYSTEMS 1 Chair: Hans Larsen			
TIME	ID	TITLE	AUTHORS
14:00	748	Adhesively Bonded Trusses: Experimental and Numerical Investigation	Till Vallée, Thomas Tannert, Simon Hehl, Markus Schwendimann
14:20	744	Prediction of Modal Frequencies, Modal Shapes and Static Point Load Deflections of I-Joist Timber Flooring Systems Using Finite Element Method	Jan Weckendorf, Binsheng Zhang, Abdy Kermani
14:40	437	Reliability Analysis of Metal Plate Connected Wood Truss Assemblies Concerning Buckling Failure	Xiaobin Song, Frank Lam
15:00	630	Two-by-Four House Construction Using Laminated Bamboos	Yan Xiao, Guo Chen, Bo Shan, Liyong She
15:20	629	In-Plane and Out-of-Plane Modal Responses of Timber Light-Frame Wall Segments	Gopinath Gupta, Andi Asiz, Ian Smith, Ying-Hei Chui
Room Venezia Session 35 REPAIR AND MONITORING TECHNOLOGIES 1 Chair: Helena Cruz			
TIME	ID	TITLE	AUTHORS
14:00	116	Test Research of the Nail Joints on Light Wood Structure	Liu Yan, Zou-Xiaojin, Guo Yun

14:20	102	Structural Health Monitoring of Glued Laminated Timber with a Novel Air Coupled Ultrasound Method	Sergio J. Sanabria, Juerg Neuenschwander, Peter Niemz, Urs Sennhauser
14:40	341	Glulam Exposed Structures for Long Span Bridges in Italy: the Importance of an Adequate Durability Design and of a Maintenance Programme	Giorgio Bignotti
15:00	832	A Post-Byzantine Mansion in Athens. The Restoration Project of the Timber Structural Elements	Eleftheria Tsakanika -Theohari, Harris Mouzakis
15:20	633	Seismic Evaluation of a Traditional Timber Temple in Japan – Seismic Diagnosis of Honmyoin Main Hall	Masahiro Watabe
Room Riva			
Session 36 SEISMIC AND RACKING DESIGN 3 Chair: Robert Hairstans			
TIME	ID	TITLE	AUTHORS
14:00	673	Numerical Analysis for Evaluation of the Effect of Exterior Walls on Seismic Performance of Wooden Post-and-Beam Houses	Takafumi Nakagawa, Takahiro Tsuchimoto, Tatsuya Miyake, Naohito Kawai, Masamitsu Ohta
14:20	651	The Impact of Tongue and Gulls Connection System for Earthquake Resistances for Javanese Wooden House	Yulianto P Prihatmaji, Akihisa Kitamori, Kohei Komatsu
14:40	645	Exponential Hysteretic Characteristics of Wooden Structures: Model Development and Experiment Validation	Ying Gao, Hisamitsu Kajikawa
15:00	642	Seismic Evaluation of Indonesian Traditional Wooden Structures	Noriko Takiyama, Mitsuhiro Miyamoto, Yugo Ishizuka, Haruki Takahashi, Dyah Arnawati, Yasuhiro Hayashi
15:20	641	Residual Seismic Performance of Wooden Buildings by Low Cost Sensor Recording Maximum Connection Deformation	Mitsuhiro Miyamoto, Noriko Takiyama, Haruki Takahashi, Yugo Ishizuka, Yasuhiro Hayashi
15:40	Coffee Break		

POSTER SESSION

Palameeting		Thematic area CULTURAL HERITAGE ASSESSMENT	
TIME	ID	TITLE	AUTHORS
16:20-18:00	846	A Traditional Anatolian Wood Carving Technique: Kundekari	Özlem Bozkurt, Züleyha Bozkurt
	759	Combined Methods for in Situ Mechanical Identification of Ancient Timber Structures Based on Non-Destructive Tests	Maria Rosaria Grippa, Beatrice Faggiano, Anna Marzo, Federico M. Mazzolani
	727	Structural Performance of Traditional Timber Townhouses in the Historic Town of Wakimachi in Japan	Hiromi Sato, Kazuki Chiba, Kaori Fujita
	666	Linking Traditional Competence to Contemporary Knowledge for the Conservation of Historic Wooden Windows	Susanne Gampfer
	584	A Study for a High Quality Preservation System of Kokera Roofing Used in Traditional Wooden Architecture. Part 1: the Analysis of the Life Cycle Properties of Kokera Roofing	Yuko Taage, Osamu Goto, Hirokazu Yamamoto, Masaki Tamura
	600	A Study on the High Quality Preservation System of Kokera Roofing Applied for Traditional Wooden Architecture. Part.2 The Field Survey on Properties of Manufacturing of the Kokera Roofing in Comparison with Growth Environment.	Satomi Takatsuka, Goto Osamu, Yamamoto Hirokazu, Tamura Masaki
	577	A Constrasting of Chinese Classical Furniture and Ancient Architecture	Gao Guang, Ye Peng, Jiang Ye
	566	Field Investigation of a 100 Year-Old Timber Foundation at a Historic Copper Mine	James P. Wacker, Xiping Wang, Douglas Rammer
	535	Assessment of Decay in Existing Timber Members by Means of Wave Velocity Perpendicular to the Grain	Roberto Martínez, Ignacio Bobadilla, Guillermo Iñiguez, Francisco Arriaga, Miguel Esteban, Eva Hermoso
	236	Restoration of Historic Timber Structures: the Great Roof Structures of the Cathedral of Vercelli	Clara Bertolini, Gianoreste Biglione, Luciana Cestari, Germana Corradino, Alan Crivellaro, Daniele De Luca, Tanja Marzi, Pia Panosch, Riccardo Pasquino

	93	The Structural Art Study of Chinese Qing Dynasty Royal Building-Dazheng Hall	Peng Ye
	74	Nanotechnologies / Smart-Materials in Timber Constructions Belonging to Cultural Heritage	Clara Bertolini, Stefano Invernizzi, Tanja Marzi, Jean-Marc Tulliani
	811	Structural Characteristics of the Sustainable Wooden Storehouse in Mountains Region of Central Japan	Takahiko Higuchi, Hinako Wakisaka, Shigeo Hoyano, Toshikazu Tsuchimoto
Palameeting Thematic area GRADING AND STRUCTURAL TIMBER			
TIME	ID	TITLE	AUTHORS
16:20-18:00	813	Variation of Growth Ring Width in Maritime Pine (Pinus Pinaster Ait.) Wood	Ofélia Anjos, Marta Margarido, Isabel Pinto, Arto Usenius, Helena Pereira
	790	Strength of Polish Grown Pine (Pinus Sylvestris L.) Timber. An Attempt of Determination of Quality of Timber for Structural Use.	Andrzej Noskowiak, Grzegorz Pajchrowski, Grzegorz Szuminski
	758	Structural Grading of Old Chestnut Elements by Bending and Compression Tests	Beatrice Faggiano, Maria Rosaria Grippa, Anna Marzo, Federico M. Mazzolani
	757	Experimental Analysis on Old Chestnut Timber by Means of Non-Destructive Techniques	Beatrice Faggiano, Maria Rosaria Grippa, Anna Marzo, Federico M. Mazzolani
	713	Estimation of Hankinson Formula , Maximum Stress Theory and Tsai-Hill Failure Theory to Determine the Strenght Variation of 3-PLY Laminated Veneer Lumber with Grain Slope	Sei-chang Oh
	672	Computational and Theoretical Analysis of Displacement Caused by Shear Force in Beams of Wood Subject to Static Bending	Fábio Albino de Souza, Nilson Tadeu Mascia
	671	The Mechanical Properties of 2"×4" Chinese Fir Dimension Lumber on Visual Grades	Wei Guo, Haiqing Ren, Jinghui Jiang, Xiuqing Luo
	614	Shear Problems in Timber Engineering – Analysis and Solutions	Ernst Gehri
	568	Enhanced On-Line Stress Grading of Sawn Lumber Using Near Infrared Spectroscopy	Takaaki Fujimoto, Yohei Kurata, Kazushige Matsumoto, Satoru Tsuchikawa
	506	Effect of Annual Ring Patterns on Norway Spruce Resulting Material Properties	Nathalie Labonnote, Kjell Arne Malo
	427	A Multidisciplinary Study Assessing the Properties of Douglas-Fir Grown in the South West Region of the United Kingdom	Jonathan Bawcombe, Richard Harris, Peter Walker, Martin Ansell
	361	The Material Behaviour of Radiata Pine under Compression	Steffen Franke, Pierre Quenneville
	354	Strength Grading and Prediction of Shape Stability by Use of Optical and Laser-Based Scanning Techniques	Hans Petersson
	352	Application of Nondestructive Techniques to Evaluate the Bending Properties of Taiwania (Taiwania cryptomerioides) Glulam	Te-Hsin Yang
	261	Compressive Creep of Wood at High Strain Levels and Variable Moisture Condition	Andreja Kutnar, Lauri Rautkari, Frederick A. Kamke
	207	Tree-of-Heaven (Ailanthus Altissima): Enormous and Wide Potential Neglected by the Western Civilisation	Reinhard Brandner, Gerhard Schickhofer
	190	Machine Strength Grading - Prediction Limits – Evaluation of a New Method for Derivation of Settings	Rune Ziethén, Charlotte Bengtsson
	163	Property Relationships Used EN 338 Strength Grades of Norway Spruce Structural Timber	René Steiger, Arnold Martin, Robert Jockwer
	157	Grading of Sawn Timber with Dynamic Methods – Influence of Defects	Marie Johansson, Anders Olsson
	97	Strength Grading of Wet Norway Spruce Side Side Boards by Use of Axial Dynamic Excitation	Jan Oscarsson, Anders Olsson, Marie Johansson, Bertil Enquist, Erik Serrano
	70	Evaluation of the Strength of Shaved Steamed Pinus Radiata Poles	Bryan Walford, J. B. Chapman
Palameeting Thematic area HARDWOODS			
TIME	ID	TITLE	AUTHORS
16:20-18:00	697	Analysis of the Pilot Production of 10 Wooden Windows of Sawn Eucalyptus. Study Case: Joinery Madeirarte (Itapeva-SP/Brasil)	Thaísa Marques Leite, Akemi Ino

	662	The Production of Hardwood X-lam Panels to Valorise the Forest-Wood Chain in Piemonte (Italy)	Guido Callegari, Corrado Cremonini, Valeria Marta Rocco, Antonio Spinelli, Roberto Zanuttini
Palameeting		Thematic area GLULAM	
TIME	ID	TITLE	AUTHORS
16:20-18:00	841	Specie - Treatment - Adhesive. Combinations Using Brazilian Reforestations Species for Glulam Purpose	Carlito Calil Neto
	734	Design and Timber from Italy to the Carribean	Giorgio Bignotti, Giuseppe Zicola
	695	An Example of Inspection and Repair on Decayed Glulam Arch Bridge	Hiroshi Watanabe
	567	Live Load Testing and Load Rating of Older Glulam Girder Bridges	James P. Wacker, James Scott Groenier, Lola E. Hislop, David Strahl, Bill Salsig
	562	Assessment of Natural and Artificial Ageing of Glued Laminated Timber. Core Drilling, Shear and Delamination Tests	Florindo Gaspar, Augusto Gomes, Helena Cruz
	546	Higher Load Bearing Capabilities with Elastic Glue Lines for Glulam	Martin Lehmann, Sebastian Kraft, Maurice Brunner
	470	Advanced, Aesthetic, Durable, Challenging and Reliable New Glulam Structures: the Italian Tradition by Archlegno	Flavio Albertani, Alessandra Pierantozzi
	366	Finite Element Modeling of the Pre-Camber of Glulam Beams Reinforced by Compressed Wood	Buan Anshari, Zhongwei Guan, Kohei Komatsu
	337	Comparison of NDE Techniques for Assessing Stiffness of Finger-Jointed Lumber	Tobias Biechele, Meng Gong, Ying Hei Chui
	83	Green-Glued Laminated Beams – High Performance and Added Value	Erik Serrano, Jan Oscarsson, Bertil Enquist, Magdalena Sterley, Hans Petersson, Bo Källsner
	67	Field Performance After 5 Years of a Transverse Cellular Glulam Box Prestressed Bridge	Carlito Calil Junior
	64	Non-Destructive Evaluation of Finger-Joint Strength Using an On-Line X-Ray Scanner	Lin Hu, Richard Desjardins
Palameeting		Thematic area ENGINEERED WOOD PRODUCTS	
TIME	ID	TITLE	AUTHORS
16:20-18:00	799	Effects of Material Compositions on the Creep Properties of Wood-Plastic Composites Manufactured by Injection Molding	Song-Yung Wang, Huei-Chin Hsueh, Pei-Yu Kuo, Ming-Jer Tsai, Far-Ching Lin
	798	Engineered Lumber: LVL and Solid Wood Reinforced with Natural Fibres	Emanuela Speranzini, Simone Tralascia
	610	Development I-Joist with LVL and OSB	Wonwoo Lee, Yoshinori Ohashi
	593	Strength Property of Densified Sugi Adopted as Material of Connector	Kei Tanaka, Yuko Demoto, Joji Ouchi, Masafumi Inoue
	592	Evaluation of Mechanical Properties and Adjustment Factors of Wooden I-Joists for Structural Design	Yoshinori Ohashi, Kazushige Matsumoto, Takuro Hirai
	582	Development of Simplified Construction Method Using SUGI Laminated Panel	Ji-Young Park, Junya Tsuruta, Kei Tanaka, Masafumi Inoue
	452	Verification of Bearing Strength of an LVL Flanged, OSB Webbed I-Joist	David Pope, Julian Marcroft
	394	Improvement in Flexibility of Laminated Veneer Lumber by Using Pressure-Sensitive Adhesives	Koji Adachi, Hidefumi Yamauchi, Katsumi Kojima, Masafumi Inoue
	389	Properties and Chemical Changes of Surface Densified Wood	Lauri Rautkari, Mark Hughes, Milena Properzi, Frédéric Pichelin
	202	Possibility of Utilization of Oil Palm as a Raw Material for Wood-Based Materials	Masatoshi Sato, Motoe Ando, Tomoko Sugimoto, Rokiah Hashim
	184	Creep Behavior of Wood I-Joists with Web Openings Exposed to Normal and Low Relative Humidity Conditions	Richard W. Runyen, David W. Dinehart, Shawn P. Gross, W. Gary Dunn

	170	Vibrational Performance of Metal-Webbed Timber Floors	Binsheng Zhang, Jan Weckendorf, Abdy Kermani, Tony Fillingham
	490	CLTdesigner – A Software Tool for Designing Cross Laminated Timber Elements: 1D-Plate-Design	Alexandra Thiel, Gerhard Schickhofer
Palameeting Thematic area COMPOSITE STRUCTURES			
TIME	ID	TITLE	AUTHORS
16:20-18:00	819	Application of Timber-Lightweight Composite Structures for Building Construction	Wolfgang Winter, Alireza Fadai, Marjan Maftoon
	805	In-Plane Strengthening of Timber Floors for the Seismic Improvement of Masonry Buildings	Maria Rosa Valluzzi, Enrico Garbin, Massimo Dalla Benetta, Claudio Modena
	742	Experimental and Numerical Investigations on Concrete-Bamboo Composite Slabs	Till Vallée, David Guzman, Simon Hehl, Thomas Tannert
	725	Timber-Concrete Composite Systems with Cross Laminated Timber	Luís Jorge, Johannes Habenbacher, Bruno Dujic
	640	Exterior Brick Masonry Veneer Supported by Metal Plate Connected Wood Trusses	Agron E. Gjinolli, Larry Wainright
	544	The Application of Biocomposites in the Construction Industry	Alexander Naughton, Mizi Fan
	467	Parametric Analysis of Composite Reinforced Wood Tubes under Axial Compression	J. M. Cabrero, Andreas Heiduschke, Peer Haller
	436	Development of Wood Composite I-Beam Using Japanese Cedar Composite Panel	Min-Chyuan, Yeh Yu-Li Lin, Haw-Jang Tsai
	356	The New Arpa Research Centre in Ferrara: Composite Wood Panels in Non-Conventional Timber Structures	Matteo Cont, Mauro Cantone, Stefano Torresani
	300	Geometry Determination of Hybrid Systems	Krunoslav Pavković, Boris Baljkas, Miljenko Haiman
	294	Hybrid Wall-and Ceiling-Slabs Made of Timber and Anhydrite Floor Layer for Multi-Storey Timber Houses – Development and Investigation with Large-Scale Specimens, Numerical Simulation and Close-Range Photogrammetry	Karl Rautenstrauch, Markus Jahreis, Jens Mueller, Wolfram Haedicke, Christian Dorn
	274	Non-Linear Analysis of Two-Layer Timber Beams Considering Interlayer Slip and Uplift	Aleš Kroflič, Igor Planinc, Miran Saje, Goran Turk, Bojan Čas
	255	GFRP-Glulam-Concrete Composite Beams: an Experimental Evaluation	Antonio Alves Dias, José Luiz Miotto
	143	Dynamic (Vibration) Behaviour of Timber-Concrete Composite Flooring Systems	Rajendra Rijal, Bijan Samali, Keith Crews, Rijun Shrestha
	72	Tubular Timber Poles for Small Wind Turbines	Andreas Heiduschke, Petra Kubowitz, Martin Hamann, Rensteph Thompson, Peer Haller
	53	Flexural Properties of I-Beams Made with Nondestructively Tested LVL-Flanges	Claudio Henrique Soares Del Menezzi, Airtón M. L. Santos, Geraldo Bortoletto Jr
	725	Timber-Concrete Composite System with Cross-Laminated Timber	Luís Jorge, Johannes Habenbacher, Bruno Dujic
Palameeting Thematic area JOINTS			
TIME	ID	TITLE	AUTHORS
16:20-18:00	829	Experiment on Traditional Timber Connections Subjected to Bi-Axial Bending	Wen-Shao Chang, Kohei Komatsu
	785	Mechanical In-Plane Joints between Cross Laminated Timber Panels	Maurizio Follesa, Michele Brunetti, Rita Cornacchini, Silvio Grasso
	782	Double-Shear Timber Joints with High Strength Steel Dowels	Carmen Sandhaas, Jan-Willem van de Kuilen, Peter de Vries
	747	Probabilistic Design Method for Timber Joints	Till Vallée, Thomas Tannert, Frank Lam
	746	Contact Joints: Experimental and Numerical Investigation	Thomas Tannert, Till Vallée
	661	The Study of a New Connection for Tension Member	Tzu-Hsien Shih, Far-Ching Lin

	605	Experimental Study on the Performance of the Nailed Joint with the Rust	Hiroki Ishiyama, Mikio Koshihara
	594	Study on Strength Mechanism of Joint System Composed of Metal Connector and Adhesive in Timber Structures	Masafumi Inoue, Risa Tenkumo, Tsuyoshi Sato, Yutaro Nakashiro, Kei Tanaka, Takuro Mori
	493	Numerical Modeling of Connections with Timber Pegs	Francesco Portioli, Carla Ceraldi, Renata Marmo, Raffaele Landolfo
	460	An Effect of Lapped Length of Kanawa-Tsugi Connection on a Bending Performance as a Japanese Traditional Connection	Atsushi Tabuchi, Takuro Mori, Kohei Komatsu, Satoru Murakami
	397	Practical Analysis on the Load-Deformation Behavior of the Steel Plate on Wood	Ken Kamachi, Masafumi Inoue
	384	A Study of Bearing Strength with Different End Distance, Bolt Diameter and Wood Species	Wataru Kambe, Naoyuki Itagaki, Yasuo Iijima
	355	Effects of Metal Plate Connector Size, Orientation and Moisture Content Treatment on Tension Strength of Chinese Larch Splice Joints	Wei Guo, Benhua Fei, Rongjun Zhao, Haibin Zhou
	338	Evaluation of the Behavior of Post & Beam with Mortise and Tenon	Chun-Young Park, Chul-Ki Kim, Jun-Jae Lee
	325	A New Approach to Obtain Embedding Strength of Double-Sided Nail Plate Joints	Tinozivashe Zhou, Zhongwei Guan
	317	Expedient Moment Connections for Large Scale Portal Frame Structures	Felix Scheibmair, Pierre Quenneville
	312	Withdrawal of Lag Screws in End-Grain	Joergen L. Jensen, Pierre Quenneville, Makoto Nakatani
	305	Influence of Timber Dimension on Withdrawal Behaviour of Lagscrewbolt	Makoto Nakatani, Bryan Walford
	257	High Strain Rate Effects in Composite Wooden Bolted Connections	William Syron, Roberto Lopez-Anido, Edwin Nagy
	227	Moment Resisting Timber Joints with Highstrength Steel Dowels: Natural Fiber Reinforcements	Ali Awaludin, Yoshihisa Sasaki, Takuro Hirai, Akio Oikawa, Toshiro Hayashikawa
	181	Experimental Investigation of Wood Nailed Top Chord Attachments for Open Web Steel Joists	Michael J. Martignetti, Shawn P. Gross, David W. Dinehart, Sameer S. Fares, Joseph R. Yost
	158	Monotonic Tests of Structural Carpentry Joints	Pedro Palma, João Ferreira, Helena Cruz
	148	Generation of Numerical Analysis Models for the Optimization of Anchorage Solutions with Threaded Bars Glued in Timber	Emilio Martín Gutiérrez, Javier Estévez, Dolores Otero, José Antonio Vázquez
	142	An Empirical Model to Predict Load-Slip Response of Laterally Loaded Nailed Joints	Qing Wang, Ying Hei Chui, Chun Ni, Ian Smith, Andi Asiz
	68	Modeling of Nailed Joints in Wooden Structures	Nilson Tadeu Mascia, Cláudia Lúcia de Oliveira Santana
	62	Baring Capacity of Bolt Washers	Ad J.M. Leijten, André J.M. Jorissen
Palameeting	Thematic area BUILDING SYSTEMS		
TIME	ID	TITLE	AUTHORS
16:20-18:00	810	Some Similarities on the Making of the Timberframed Structures in Europe and Japan Via the Examples with Ridge-Supporting Posts	Toshikazu Tsuchimoto
	784	Case Study of Combination Ways of Timber and Steel in Japanese Buildings	Hiroshi Isoda, Naohito Kawai, Mikio Koshihara
	528	Structural Continuity of FRP Systems in Wood Carpentry	Giovanni Cenci
	206	The Planning Approach and the Intervention Choices: from the Trabocco Turchino to New Constructions	Marcello Borrone, M. Cristina Forlani, Donatella Radogna
	79	Timber Off-Site Modern Methods of Construction	Robert Hairstans

Palameeting		Thematic area MULTI-STOREY BUILDINGS	
TIME	ID	TITLE	AUTHORS
16:20-18:00	820	Steel Reinforced Timber Structures for Multi Storey Buildings	Tavoussi Kamyar, Wolfgang Winter, Tamir Pixner, Michael Kist
	552	Analysis of Structural Timber System for Multi-Storey Building in Spain	Vladimir Rodríguez
	458	The “Sustainable Condominium”: a Six-Storey Timber Building in Florence	Maurizio Follesa, Paolo Lavisci, Vincenzo Esposito, Lorenzo Panerai, Marco Barone, Dimitri Celli, Stefano Cappelli
	382	The Influence of Thermal Mass on Space Conditioning Energy of Multi-Storey Timber Buildings	Nicolas Perez, Alan Tucker, Stephen John, Larry Bellamy, Andy Buchanan
	51	Beam and Post System for Non-Residential Multi-Storey Timber Buildings – Conceptual Framework and Key Issues	Gabriela Tlustochowicz, Abdy Kermani, Helena Johnsson
Palameeting		Thematic area REPAIR	
TIME	ID	TITLE	AUTHORS
16:20-18:00	665	Evaluation of the Resistance Loss of OSB Panels After Provisory Utilization in the Civil Construction	Alexandre Monteiro de Carvalho, Vítor Garcia Setubal
	621	Study for Bearing Performance Reinforced by Screws	Satoru Murakami, Kiho Jung, Akihisa Kitamori, Kohei Komatsu
	599	Development of New Seismic Retrofit Unit for Traditional Japanese Style Room in Existing Wooden Post and Beam House	Masafumi Inoue, Junya Tsuruta, Ji Young Park, Kei Tanaka
	597	Strengthening of Old Timber Beams by Means of Externally Bonded Reinforcement	Andrea Benedetti, Camilla Colla
	575	Restoration and Revitalization of Wood Structures in the Congress Club in Brasilia, Brazil	Roberto Lecomte de Mello
	435	Effect of Surface Treatments on the Durability of Structural Bonded Timber Joints	João Custódio, Helena Cruz, James Broughton
	319	Bending Strength Reinforcement of Compound Building Components Made of Logs	Kazuhiro Akashio, Hisashi Matsui, Atsushi Tanaka
Palameeting		Thematic area FAILURE ANALYSIS	
TIME	ID	TITLE	AUTHORS
16:20-18:00	836	Mechanical Testing of Wood Assisted by Infrared Spectroscopy and Thermal Imaging	Jakub Sandak, Anna Sandak, Martino Negri
	714	Experimental Analysis of Slender Timber Columns of Pinus SPP Wood	Everaldo Pletz, Jorge Daniel de Mello Moura
	632	An Experimental and Numerical Method Separating Mixed-Modes Fractures in Wood	Rostand Moutou Pitti, Frédéric Dubois, Octavian Pop, Nicolat Sauvat, Nicaise Manfoumbi
	310	Fracture of Circular-Holed Wood Plate by Interior Pressure	Hitoshi Kuwamura
	122	A Fracture Mechanics Study of Thermally Modified Beech for Structural Applications	M. Almudena Majano Majano, Mark Hughes, José L. Fernández-Cabo
	69	Uniaxial and Biaxial Tests for Evaluation of Failure Criterion of Anisotropic Material Applied to Wood	Nilson Tadeu Mascia, Rodrigo Todeschini, Elias Antonio Nicol
Palameeting		Thematic area MECHANICAL MODELLING	
TIME	ID	TITLE	AUTHORS
16:20-18:00	694	A General FE-Model to Predict Capacity of a Steel-Timber Dowel Joint with Complex Loading	Marie Johansson, Johan Sjödin
	644	The “Trabocchi”: the “Turchinio” Case, Experimental Tests and Mathematical Models	Alberto Viskovic, Pasqualino Carusi, Vincenzo Sepe
	532	Computational Issues Regarding Lattice Models for Wood	Thomas Reichert, Daniel Ridley-Ellis
	525	Three-Dimensional Numerical Model of Progressive Failure in Wood Light-Frame Buildings	Ying Hei Chui, Andi Asiz, Lina Zhou, Ian Smith

	383	Study on the Numerical Analysis for Structural Detail of Timber Frame Based on Partial Compressive Strain Behavior of the Joints	Shinya Matsumoto, Yoshinobu Fujitani, Yoshiyuki Suzuki
	340	The Benefit of Micromechanical Modeling in Timber Engineering	Karin Hofstetter, Thomas K. Bader, Michael Dorn
	318	FE-Based Strength Analysis of Penglai Pavilion	Wang Lin An, Hou Weidong, Xiao Biyong, Huo Jingsi

Palameeting Thematic area **FIRE**

TIME	ID	TITLE	AUTHORS
16:20-18:00	603	Experiments and Analysis on the Charring Depth of Small-sectioned Pine Column Elements	Kazunori Harada, Mio Yoshimura, Keisuke Himoto, Tatsuo Okuda, Tatsuru Suda, Yoshiyuki Suzuki
	282	Fire Resistance of Hybrid Timber Framed Wall Systems	Joo-Saeng Park, Kweon-Hwan Hwang, Kug-Bo Shim, Moon-Jae Park
	225	Fire Resistance of Steel Column Glued with Structural Glulam Covers	Sangsik Jang, Yunhui Kim, Jang Youngik, Iljoong Shin

Palameeting Thematic area **SEISMIC**

TIME	ID	TITLE	AUTHORS
16:20-18:00	776	Experimental Researches of Gypsum Wallboard's Contribution to Lateral Resistance Capacity of Wood Shear Wall	Minjuan He, Nannan Zhou, Hao Huang
	752	Performance of Braced Walls under Various Boundary Conditions	Chun Ni, Kugbo Shim, Erol Karacabeyli
	722	Seismic Analysis of Existing Buildings with Different Construction Upgrades	Jure Jancar, Bruno Dujic
	719	Timber Upgrade of Structures on Seismically Active Areas	Iztok Šušteršič, Bruno Dujic, Samo Gostic
	687	Improvement Technology of Seismic Performance of Traditional Wooden Houses by Full Scale Shaking Table Tests	Yoshimitsu Ohashi, Hidemaru Shimizu, Kyoussuke Mukaibo
	683	Seismic Capacity Evaluation of Mud-Plastered Walls Considering Strength of Mud	Hiroyuki Nakaji, Koji Yamada, Masato Nakao, Yoshiyuki Suzuki
	669	Effect of Outside Insulation with High-Strength Screws on Wooden Shear Wall with Structural Panels	Takeyoshi Uematsu, Hideki Hirakawa, Takuro Hirai, Daisuke Katayama, Tomokazu Sasaki, Takahiro Chiba, Tsukasa Tomabechi, Masahiko Toda, Yasunobu Noda
	664	The Moisture Content Change of High Performance Wall Structure in Taiwan.	Wei-Ping Chang, Far-Ching Lin, San-Hsien Tu
	663	The Structural Analysis and Performance of Wood Cellular Retaining Wall	Bo-Yang Cheng, Far-Ching Lin, Min-Lang Lin, Chiang Wei
	652	Calculation Method for Rigidity and Strength of Roof Diaphragm and Experimental Verification	Tomoaki Soma, Masahiro Inayama, Naoto Ando
	639	Moment Resisting Performance of French Scarf Joint, Okkake-Tugi	Kobayashi Yoshihiro, Kamachi Ken, Inayama Masahiro
	622	Seismic Response Controlled Effect of Wooden Houses by Framed Analysis	Kazuhiro Matsuda, Hiroyasu Sakata, Kazuhiko Kasai
	609	Three Dimensional Static and Dynamic Eccentricity of Multi-Story Wooden Houses Part 1. Experimental Study	Shinji Hikita, Kenji Miyazawa, Yasutaka Irie
	608	Three Dimensional Static and Dynamic Eccentricity of Multi-Story Wooden Houses Part 2. Analytical Study	Kenji Miyazawa, Kento Suzuki, Yasutaka Irie
	569	Experiment for Effective Mass and Seismic Behavior of Furniture – Response Prediction of Wood-Frame House by These Dynamic Behaviours	Tomoya Okazaki, Hiroshi Isoda, Yoshiaki Wakashima
	547	Next Generation Numerical Model for Non-Linear In-Plane Analysis of Wood-Frame Shear Walls	WeiChiang Pang, Masood H. Shirazi
	533	Behavior of Wood-Framed Residential Structure under Surge Wave Loading	Jebediah Wilson, John W. van de Lindt, Rakesh Gupta, Daniel T. Cox

	523	Full-Scale Destructive Tests on Wood Light-Frame Structures	Andi Asiz, Ying Hei Chui, Ian Smith, Michael Bartlett
	479	A Study on Shearing Behaviour of Bearing Walls by Wooden Panels Construction	Haruhiko Ogawa, Ayumu Mitsuhashi, Hisamitsu Kajikawa, Hiroyuki Noguchi
	466	A Study on the Effective Earthquake-Resistant Constructive Planning of the Wooden Construction with an Energy Absorbing Mechanism	Yuka Okada, Hisamitsu Kajikawa, Haruhiko Ogawa, Hiroyuki Noguchi
	463	Influence of Contact Stress between Sheets on Strength and Stiffness of Timber Frame Shear Walls	Johan Vessby, Bo Källsner, Ulf Arne Girhammar
	432	European Seismic Design of Shear Walls: Experimental and Numerical Tests and Observations	Clément Boudaud, Stéphane Hameury, Carole Faye, Laurent Deaudeville
	359	Influence of Vertical Loads on Lateral Resistance of Light-Frame Shear Walls	Alexander Salenikovitch, Mario Payeur
	347	Racking Performance of Wood Shearwalls Consisting of Finger-Joined Studs	Meng Gong, Stephen Delahunty, Y.H. Chui
	127	Prediction of Structural Performance of Sugi Plywood Shear Wall by Computer Simulation Based on Hoffman Failure Criterion	Ping Yang, Motoyoshi Ikeda, Yoshiyuki Suzuki
	92	Horizontal Resistant Force Estimation of Mud Plastered Walls for a Japanese Traditional Wooden Structure	Koji Yamada, Masato Nakao, Yutaka Yamazaki, Yoshiyuki Suzuki
Palameeting Thematic area BRIDGES			
TIME	ID	TITLE	AUTHORS
16:20-18:00	268	Proposal of a Square Steel Tube-Timber Hybrid Bridge and the Technologies Used for It	Chida Tomohiro, Takanobu Sasaki, Seizo Usuki, Humihiko Gotou, Yosinori Sinohara, Atsushi Toyada
	63	Design, Construction and Monitoring of a Bowstring Arch Bridge Made Exclusively of Timber, CFRP and GFRP	Widmann Robert, Urs Meier, Rolf Brönnimann, Philipp Irniger, Andreas Winistörfer
Palameeting Thematic area ROADS			
TIME	ID	TITLE	AUTHORS
16:20-18:00	628	Service Ability Monitoring of Timber Guardrail on Roadways	Rihong Zhang, Takao Nakazawa, Kazuo Kanemaru, Yutaka Iimura
	242	Eucaliptus Crossheads for Urban and Rural Electric Distribution Systems	Sandro Fábio Cesar, Rita Dione Araújo Cunha, Sandra Neusa Marquesini Ferreira, Mariella Mendes Revilla
	235	Midwest Guardrail System with Round Timber Posts	Ronald K. Faller, David E. Kretschmann, John D. Reid, Jason A. Hascall, Dean L. Sicking
Palameeting Thematic area FACADES			
TIME	ID	TITLE	AUTHORS
16:20-18:00	501	TES EnergyFaçade – 2nd Chance for Architecture	Frank Lattke
	500	TES EnergyFacade – Construction Principles	Stephan Ott, Stefan Winter
	342	Structural Performance of External Timber Cladding	David Crawford, Robert Hairstans, Ivor Davies
	149	A Novel Façade Sandwich Panel with Low-Density Wood Fibres Core	José L. Fernández Cabo, M. Almudena Majano Majano, Luis San-Salvador Ageo, Miguel Ávila Nieto
Palameeting Thematic area ENVIRONMENTAL IMPACT			
TIME	ID	TITLE	AUTHORS
16:20-18:00	738	Primary Energy Consumption in Buildings and the Emission-Trading-Scheme: Chances for the Timber Sector?	Annette Hafner, Dietsch Philipp, Stefan Winter
	675	Technologies and Environmental Benefits to Reuse Two-by-Four Salvaged Lumbers	Shiro Nakajima, Takafumi Nakagawa
	657	The Brazilian Architecture in Wood and the Confrontations with the Questions of the Environment	Rosa Maria Bittencourt, Roberto Lecomte de Mello

	428	Natural Technologies	Piergiorgio Rossi
	418	Evaluation of Indoor Thermal Environment in Heated Small Scale-Model Houses	Yoon-Seong Chang, Se-Jong Kim, Jun-Jae Lee, Hwanmyeong Yeo
	333	Nano-Based Modifications of Wood and Their Environmental Impact: Review	Selamawit M. Fufa, Per J. Hovde
	243	The Relationship between the Wood Timber Using Minka (Traditional Japanese Farmhouses) and the Local Forest Resources	Masatoshi Sugimori, Natsuko Tamaki
	241	Sustainable Design Furniture Using Recycled Wood	Sandro Fábio Cesar, João Paulo Leite Guedes, Rita Dione Araújo Cunha
	230	Wooden Construction as “Urban Forest Reserves”	Takanori Arima
	44	Thermal Decontamination of Railway Sleepers for Recycling. Changes in Mechanical Wood Properties	Ganne-Chédeville Christelle, Ingo Mayer, Julien Ropp, Frédéric Pichelin

Palameeting Thematic area **SERVICE LIFE**

TIME	ID	TITLE	AUTHORS
16:20-18:00	659	Experimental Decoupling of Hydrics and Postponed Phenomena of Timber Structures in Controlled Climate Conditions	Nicaise Manfoumbi, Nicolas Sauvat, Octavian Pop, Frédéric Dubois
	395	A Study on Predicting the Lifetime of Timber Bridges	Shogo Araki, Hideyuki Hirasawa, Takanobu Sasaki, Noboru Nakamura, Seizo Usuki
	267	Prefabricated Insulation Elements for the Improvement of the Building Stock on the Basis of Digital Measurement Systems	Klaudius Henke, Jörg Schaffrath, Stefan Winter
	224	Analysis of Climate Conditions in Crawl Spaces with High Insulated Wooden Floor Plates for the Prevention of Structural Damages	Norman Werther, Stefan Winter
	177	Integrated Multidisciplinary Research and Demonstration. Project “Intensys” for Future Modes of Living and Concepts for Sustainable Housing	Anton Kraler, Therese Trojer, Michael Flach, Maria Schneider
	176	Load Combination of Moisture Induced Eigen-Stresses in Timber	Martin Häglund, Fredrik Carlsson
	61	Thermal Degradation of Goupia Glaba (Cupiúba) Timber	Edna Moura Pinto, Carlito Calil Junior

Palameeting Thematic area **SPECIALS**

TIME	ID	TITLE	AUTHORS
16:20-18:00	778	Cross-Cultural Workshop as a Professional Learning Environment	Harri Metsälä
	656	The Formation of the Professionals for the Timber Industrial Sector of the Civil Construction	Rosa Maria Bittencourt
	380	A Study on the Educational Effect of the Timber Building Design with the Regional Timbers Based on the Inhabitant Participation Workshop	Katsuhiko Kohara, Mitsutaka Tsuji
	315	Sand Flush in Fish Way Using Wood Partition	Hideyuki Hirasawa, Megumi Takeuchi, Shoya Ikeda, Jun Tonuma, Tetsuya Sato
	233	Temperature Prediction in Timber Using Artificial Neural Networks	Paulo Cachim
	179	Sysholz	Anton Kraler, Barbara Reichhold

Wednesday 23

PARALLEL SESSIONS • MORNING

Room Gardalake			
Session 37 JOINTS AND FASTENERS 7 Chair: Kazumasa Watanabe			
TIME	ID	TITLE	AUTHORS
8:00	264	Performance of Mortise and Tenon Connection Fastened with Wood and Steel Dowel	Rohana Hassan, Azmi Ibrahim, Zakiah Ahmad
8:20	256	Evaluation of the Performance of Joist-to-Header Self Tapping Screw Connections	Florian Prat-Vincent, Colin Rogers, Alexander Salenikovich
8:40	250	Simulation and Research of a Rounded Dovetail Connection	Wolfram Hädicke, Jens Mueller, Astrid Loeffler, Karl Rautenstrauch
9:00	226	Relaxation of Pretension of Bolted Timber Joints under Steady Condition	Ali Awaludin, Yoshihisa Sasaki, Takuro Hirai, Akio Oikawa, Toshiro Hayasikawa
9:20	221	Experimental Studies on Timber Beam Connections with Glued-In Fiber Reinforced Plates	Maria Adelaide Parisi, Giulia Fava, Carlo Poggi, Chiara Tardini
Room Dolomite			
Session 38 MULTI-STOREY BUILDINGS 1 Chair: Vahik Enjily			
TIME	ID	TITLE	AUTHORS
8:00	564	Difficulties in Expanding Multi-Storey Timber Residential Building in Japan	Tzofit Shmuely-Kagami
8:20	555	The Middle Rise Housing and Public Buildings, Using the Heavy Timber and Hybrid Frames with Steel Plate Joints	Vladimir Bilek, Vaclav Rojik, Jiri Karas, Zbynek Svoboda, Lubomir Krov, Milan Peukert, Michal Panek
8:40	327	Multi Storey Timber Houses in Urban Regions in Austria	Martin Teibinger, Johann Charwat-Pessler
9:00	218	Multi-Storey Wood Frame Construction in North America	Kevin Cheung
9:20	141	Predicting Lateral Deflection and Fundamental Natural Period of Multi-Storey Wood Frame Buildings	Thomas Leung, Andi Asiz, Ying hei Chui, Lin Hu, Mohammad Mohammad
Room Trento			
Session 39 ENVIRONMENTAL IMPACT 2 Chair: David Gromala			
TIME	ID	TITLE	AUTHORS
8:00	489	Defining an Environmental Index to Compare Light-Frame Wood Wall Assemblies Using Life-Cycle Assessment	Caroline D. Frenette, Cécile Bulle, Robert Beauregard, Alexander Salenikovich, Dominique Derome
8:20	434	Wood Technology for Passive Cooling	Cristina Benedetti, Marco Baratieri, Giuliana Leone, Tanja Mimmo, Gabriele Paglialonga
8:40	175	Integrated Multidisciplinary Research and Demonstration Project "Intensys" for Future Modes of Living and Concepts for Sustainable Housing	Michael Flach, Maria Schneider, Anton Kraler, Therese Trojer, Georg Wieland, Conrad Brinkmeier
9:00	360	Wood Modification in Relation to Bridge Design in the Netherlands	André Jorissen, Emil Luning
Room Verona			
Session 40 BUILDING SYSTEMS 2 Chair: Carlito Calil Jr.			
TIME	ID	TITLE	AUTHORS
8:00	583	The Development of the Rigid Frame Wooden House Structure Jointed with Glued-In Hardwood Dowels. Moment-Resisting Test on Joint and Analysis of the Rigid Frame	Naoyuki Itagaki, Wataru Kambe, Benitez G. Alejandro, Yoshimitsu Ohashi, Yasuo Okazaki, Yasuo Iijima
8:20	574	A New Version of Low Cost Wooden House in Central Brazil	Roberto Lecomte de Mello, Julio Eustaquio de Melo, Filipe Berutti Monteserrat, Daniel Lacerda
8:40	556	Choice Optimization of Species for Design of Wood Truss Structures by Computer Method	Mauro Augusto Demarzo, Francisco Antonio Rocco Lahr, André Luis Christóforo
9:00	526	A Study on the Wooden Shear Wall with Clear Polycarbonate Sheet	Changsuk Song, Tomoaki Soma, Masahiro Inayama, Naoto Ando

9:20	505	Japanese Timber Buildings with New Structural System	Inayama Masahiro
Room Venezia Session 41 SPECIALS 1 Chair: Abdy Kermani			
TIME	ID	TITLE	AUTHORS
8:00	740	Interdisciplinary Design Projects in the Education of Civil Engineers	Jörn von Grabe, Philipp Dietsch, Stefan Winter
8:20	723	Patient Rooms with Different Degrees of Wood: a Preference Study Conducted among Hospital Staff	Tina Bringslimark, Anders Q. Nyrud
8:40	660	The Case Study of Forestry Undergraduate Student Engaging in Earthquake Engineering Competition	Far-Ching Lin
9:00	637	Timber Truncated Icosahedron as an Educational Tool on Architecture	Atsushi Tabuchi, Shinsaku Munemoto
9:20	503	Building...a New Experience in Africa	Susanne Gampfer, Wolfgang Huß, Hermann Kaufmann, Philipp Dietsch, Jörn von Grabe, Michael Merk, Peter Mestek, Jörg Schaffrath, René Stein, Stefan Winter, Norman Werhter, Arthur Wolfrum
Room Riva Session 42 SEISMIC AND RACKING DESIGN 4 Chair: J. Daniel Dolan			
TIME	ID	TITLE	AUTHORS
8:00	620	Dependence of Ultimate Seismic Performance on Specifications of Column-End Joints in 3-Story Wood Houses	Tatsuya Miyake, Takafumi Nakagawa, Takahiro Tsuchimoto, Hiroshi Isoda, Naohito Kawai
8:20	601	Shear Behavior of Thick Structural Plywood Sheeted Floor Framing with Opening	Hiroyasu Sakata, Shota Nakano, Hiromichi Ito, Azuma Fujishiro, Hitoshi Ooguchi
8:40	578	Using Wood Structural Panels for Shear and Wind Uplift Applications	Borjen Yeh, Ed Keith
9:00	576	Torsional Seismic Response Reduction by Passive Control Devise for Conventional Post-and-Beam One Story Wooden House with Stiffness Eccentricity	Yoshihiro Yamazaki, Kazuhiko Kasai, Hiroyasu Sakata
9:20	557	Prediction of Non-Linear Load-Deformation Curves of Various Types of Mud Shear Walls Subjected to Lateral Shear Force	Kohei Komatsu, Akihisa Kitamori, Kiho Jung, Takuro Mori
9:40	Coffee Break		
Room Gardalake Session 43 JOINTS AND FASTENERS 8 Chair: André Jorissen			
TIME	ID	TITLE	AUTHORS
10:20	387	Deformation Behavior Simulation for Timber Joints – Modeling of Tenon Joint with Wooden Pin and Verification with Pull Out Tests	Toshiaki Sato, Kaori Fujita
10:40	363	Analysis of the Failure Behaviour of Transversely Loaded Dowel-Type Connections in Wood	Bettina Franke, Pierre Quenneville
11:00	362	Embedding Behavior of LVL and Radiata Pine Lumber	Steffen Franke, Pierre Quenneville
11:20	328	Moment Deformation of Multi-Nailed Joints in LVL – Development of a Long Term Test Procedure	Hugh Morris, Pierre Quenneville
11:40	324	Structural Characteristics of Beam-Column Connections Using Compressed Wood Dowels and Plates	Zhongwei Guan, Kohei Komatsu, Kiho Jung, Akihisa Kitamori
Room Dolomite Session 44 MECHANICAL MODELLING 2 Chair: Tomi Toratti			
TIME	ID	TITLE	AUTHORS
10:20	655	Two-Dimensional Numerical Framework for the Nonlinear Static and Dynamic Analysis of Light-Frame Wood Buildings	Ioannis P. Christovasilis, Andre Filiatrault
10:40	220	Floor Vibrations – New Results	Patricia Hamm, Antje Richter, Stefan Winter
11:00	153	In Situ Testing of Timber Floor Vibration Properties	Kirsi Jarnerö, Anders Olsson, Anders Brandt
11:20	494	Vibrational Behaviour of Timber Floors	Ivan Glisovic, Bosko Stevanovic

Room Trento			
Session 45 FIRE SAFETY 1 Chair: Jean-Luc Sandoz			
TIME	ID	TITLE	AUTHORS
10:20	700	Fire Safety of Multi-Storey Timber Buildings	Andrea Frangi, Mario Fontana, Erich Hugl, Reinhard Wiederkehr
10:40	691	Fire Safety on Timber Frame Sites During Construction	Julie Bregulla, Sandy Mackay, Stuart Matthews
11:00	679	Risk Analysis of Collapse of Traditional Wooden House from Earthquake Fire	Tatsuru Suda, Yoshiyuki Suzuki, Kazunori Harada
11:20	654	Influence of Combustible Insulation Materials to the Fire Behaviour of Timber-Framed Buildings	Rene Stein, Stefan Winter
11:40	711	A Computer Model for Light-Frame Wood Floor Assemblies under Fire Attack	Ling Lu, O. B. Isgor, George Hadjisophocleous
Room Verona			
Session 46 BUILDING SYSTEMS 3 Chair: Vlatka Rajčić			
TIME	ID	TITLE	AUTHORS
10:20	465	Parametric Wood-Based Living System	Enrico Vizio, Paolo Scoglio
10:40	446	Transient Heat and Moisture Transfer in Light Frame Wall Assembly	Se-Jong Kim, Jun-Jae Lee
11:00	320	Opportunities and Constraints for Timber in Non-Residential Construction in Australia	Gregory Nolan
11:20	314	Timber House Structure with Uruguayan Wood Development of Structural Method and Study on Structural Performance	Alejandro Benitez Garcia, Naoyuki Itagaki
11:40	788	Lateral Resistance of Log Timber Walls Subjected to Horizontal Loads	Jorge Branco, João Paulo Araújo
Room Venezia			
Session 47 SPECIALS 2 Chair: Robert Widmann			
TIME	ID	TITLE	AUTHORS
10:20	456	Sound Absorption Coefficient of Perforated Plywood: an Experimental Case Study	Francesco Negro, Corrado Cremonini, Milena Properzi, Roberto Zanuttini
10:40	253	Flanking Transmission of Impact Noise at Solid Wood Structures	Franz Dolezal, Martin Teibinger, Thomas Bednar
11:00	251	Stability of Ambient Temperature Cure Epoxy Adhesives for Timber Structures under Creep Loading in Tension and Shear	Martin P. Ansell, Adlin S.M. Roseley, Dave Smedley
11:20	244	Are Wooden Floorings Difficult to Maintain?	Katja Vahtikari, Jonna Silvo, Tiina Vainio-Kaila
11:40	701	The Present Situation of Wooden Schools in Japan – the Transition of the Total Amount and Method of Wood Use in the Last 20 Years	Takahiko Higuchi, Satoru Nagasawa, Koichi Matsuno, Masahiro Matsuda, Masahiko Shinozaki
Room Riva			
Session 48 SEISMIC AND RACKING DESIGN 5 Chair: Bruno Dujic			
TIME	ID	TITLE	AUTHORS
10:20	538	Seismic Performance of Post and Beam Timber Buildings	Frank Lam, Minghao Li, Ricardo O. Foschi, Shiro Nakajima, Naohito Kawai, Chikahiro Minowa, Minoru Okabe, Nobuyoshi Yamaguchi, Takafumi Nakagawa
10:40	445	Blind Prediction of the Seismic Response of the Neeswood Capstone Building	Maurizio Follesa, Chun Ni, Marjan Popovski, Erol Karacabeyli
11:00	393	Racking Performance of Wood Shear Walls Fabricated Using Chinese Wood-Based Panels	Minjuan He, Hao Huang, Nannan Zhou
11:20	391	Seismic Performance of Full-Scale Post-Tensioned Timber Beam-Column Joints	Asif Iqbal, Stefano Pampanin, Alessandro Palermo, Andrew H. Buchanan
11:40	390	Shake Table Response of Multi-Storey Post-Tensioned Timber Scaled Buildings	Denis Pino M., Stefano Pampanin, David Carradine, Bruce Deam, Andrew H. Buchanan
12:00		Lunch Break	

PARALLEL SESSIONS • AFTERNOON			
Room Gardalake		Session 49 JOINTS AND FASTENERS 9 Chair: Kjell A. Malo	
TIME	ID	TITLE	AUTHORS
13:30	321	Experimental Analysis on T-Shaped Metallic Profile Connection between Main and Secondary Beams	Albino Angeli, Matteo Moretton, Andrea Polastri, Maurizio Piazza, Roberto Tomasi
13:50	316	Sharing of the Connection Load within a Row of Bolts: from Zero to Ultimate Load	Pierre Quenneville
14:10	313	Screwed Corbel Connections in Laminated Veneer Lumber	David M. Carradine, Michael Newcombe, Andrew Buchanan
14:30	311	Row Shear Failure in Bolted Connections	Joergen L. Jensen, Pierre Quenneville
14:50	292	Development of Non-Metallic Timber Connections for Contemporary Applications	Andrew Thomson, Richard Harris, Pete Walker, Martin Ansell
Room Dolomite		Session 50 MECHANICAL MODELLING 3 Chair: Goran Türk	
TIME	ID	TITLE	AUTHORS
13:30	189	Thermodynamic Approach about Fracture Modeling under Mechano-Sorptive Loading	Dubois Frédéric, Octavian Pop, Jean-Marie Husson, Nicolas Sauvat
13:50	431	Effects of Relative Humidity Conditions on Crack Propagation in Timber: Experiments and Modelling	Myriam Chaplain, Gérard Valentin
14:10	306	Experimental and Fe Analysis of Invariant Integral in Wood Specimen Using the Full Field Optical Technique	Meite Mamadou, Octavian Pop, Frédéric Dubois, Joseph Absi
14:30	209	Stress Distribution and Fracture Criterion of Tapered Wood Beam	Hitoshi Kuwamura
14:50	411	Simulation Method for Wooden Construction under the Decay	Kei Maeda, Masamitsu Ohta, Ikuo Momohara
Room Trento		Session 51 FIRE SAFETY 2 Chair: Julie Bregulla	
TIME	ID	TITLE	AUTHORS
13:30	504	Timber Slab Fire Behavior	Sandoz Jean-Luc
13:50	419	Numerical and Experimental Thermal-Structural Behaviour of Laminated Veneer Lumber (LVL) Exposed to Fire	Agnese Menis, Massimo Fragiaco, Peter Moss, Andy Buchanan, Isaia Clemente
14:10	369	Fire Performance of Timber-Concrete Composite Floors	James O'Neill, David Carradine, Peter J. Moss, Massimo Fragiaco, Andrew H. Buchanan
14:30	247	Fire Resistance of Timber Columns	Simon Schnabl, Goran Turk, Igor Planinc
Room Verona		Session 52 BUILDING SYSTEMS 4 Chair: Kevin Cheung	
TIME	ID	TITLE	AUTHORS
13:30	297	Wood from Sustainable Sources and the Mitigation of Global Climate Change – Case Study of Social Interest Housing in Curitiba, Parana, South of Brazil	Eder Zanetti, Eloy Casagrande
13:50	293	Hierarchical Structural System, the Master Carpenters' Way of Looking at Timber Structures	Kazumasa Watanabe
14:10	260	Design, Fabrication and Assembly of a Two-Storey Post-Tensioned Timber Building	Michael Newcombe, Stefano Pampanin, Andrew H. Buchanan
14:30	231	Bracing of Timber Trussed Roofs in South Africa	Walter Burdzik, Primus Nkwera
14:50	223	Experimental and Numerical Study on the Hygrothermal Behaviour of Nonventilated Wooden Flat Roof Constructions with Ecological Building Products	Norman Werther, Stefan Winter, Mike Sieder, Claudia Fülle
Room Venezia		Session 53 SPECIALS 3 Chair: Martin Ansell	
TIME	ID	TITLE	AUTHORS
13:30	183	Optimisation of an Oak Container	Nick Savage, Abdy Kermani, Hexin Zhang
13:50	172	Wood Surface Densification Using Different Methods	Lauri Rautkari, Andreja Kutnar, Mark Hughes, Frederick A. Kamke

14:10	123	Characterization of the Behavior of Sablot (Litsea Glutinosa), as Binder of Aggregates for Low-Cost Housing	Norma Esguerra
14:30	43	Thermal Decontamination of Railway Sleepers for Recycling. Removal of Creosote Oil	Ingo Mayer, Christelle Ganne-Chédeville, Julien Ropp, Urs von Arx, Frédéric Pichelin
14:50	823	Assessment of Deformation of Timber Façade Elements against Wind Load	Nesen Surmeli, Jan-Willem van de Kuilen, Geert Ravenshorst
Room Riva Session 54 SEISMIC AND RACKING DESIGN 6 Chair: Minjuan He			
TIME	ID	TITLE	AUTHORS
13:30	322	Shear Performance of Hybrid Post and Beam Wall System with Structural Insulation Panel Infill	Moon-Jae Park, Kweon-Hwan Hwang, Joo-Saeng Park, Kug-Bo Shim
13:50	299	Experimental Seismic Response of a Full-Scale Six-Story Wood Apartment Building	John W. van de Lindt, Shiling Pei, Steven E. Pryor, Douglas Rammer, Hidemaru Shimizu, Kazuki Tachibana, Hiroshi Isoda, Izumi Nakamura
14:10	285	Lateral Load Resistance of Hybrid Wall	Kug-Bo Shim, Kweon-Hwan Hwang, Joo-Saeng Park, Moon-Jae Park
14:30	240	Experimental Seismic Response of a Full-Scale Seven-Story Mixed-Use Steel/Wood Apartment Building	Steven E. Pryor, John W. van de Lindt, Shiling Pei
14:50	198	Simplified Direct Displacement Design of Six-Story Neeswood Capstone Building and Pre-Test Seismic Performance Assessment	Wei Chiang Pang, David Rosowsky, John W. van de Lindt, Shiling Pei
15:10	Coffee Break		
Room Gardalake Session 55 JOINTS AND FASTENERS 10 Chair: Motoi Yasumura			
TIME	ID	TITLE	AUTHORS
15:50	146	Failure Modes in Double-Sided Pull-Out Test of Threaded Steel Rods Glued-In Hardwood	Dolores Otero, Javier Estévez, Emilio Martín, José A. Vázquez
16:10	108	Determining Suitable Spacings and Distances for Self-Tapping Screws by Experimental and Numerical Studies	Thomas Uibel, Hans Joachim Bläß
16:30	84	Finite Element Simulation of Mechanical and Moisture-Related Stresses in Laterally Loaded Multi-Dowel Timber Connections	Sigurdur Ormarsson, Ola Dahlblom, Michael Julsbo Nygaard
16:50	412	Development of Ductile Semi-Rigid Joints with Lagscrewbolts and Glued-In Rods	Yoshiaki Wakashima, Kenho Okura, Kazuo Kyotani
Room Dolomite Session 56 ARCHITECTURE AND STRUCTURES 1 Chair: Stefan Winter			
TIME	ID	TITLE	AUTHORS
15:50	850	Swedish Pavilion at World Expo 2010 in Shanghai – Architecture and Engineering Perspective	Thomas Nordh, Egil Bartos, Johannes Tüll, Anders Neregård, Elzbieta Lukaszewska
16:10	678	Cognition on Planning Wooden School Architecture	Masako Miyasaka, Satoru Nagasawa, Masahiko Shinozaki, Takahiko Higuchi, Masahiro Matsuda
16:30	580	A New Approach to Timber Corbelled Arch Structure by Built-Up Beam System	Koichi Matsuno, Toyohiko Yamabe, Junichi Sugawara, Shingo Takishima, Masaya Fujimoto, Shu Mizuhara, Keichi Katori, Yoichi Matsumoto
16:50	516	Kerakoll Greenlab – an Ecologically Sustainable Building for an Environmentally Friendly Research	Oswald Grömminger, Gianluca Endrizzi, Daniel Moroder, Erika Putzer
17:10	477	A Tortoise-Shaped Glulam Wine Cellar in Middle Italy: a Glulam Sculpture for a New Architectural Perspective	Guido Bottanelli, Morris Albertani
Room Trento Session 57 FIRE SAFETY 3 Chair: Andrea Frangi			
TIME	ID	TITLE	AUTHORS
15:50	234	Fire Exposed Cross-Laminated Timber – Modelling and Tests	Joachim Schmid, Jürgen König, Jochen Köhler
16:10	194	Effect of Insulation on the Fire Resistance of Wood-Framed Floor Assembly	Hisa Takeda

16:30	156	Fire Performance of the Joint between a Nonload-Bearing Timber-Frame Exterior Wall and a Hollow-Core Concrete Slab Intermediate Floor – Fire Test in VTT's Fire Laboratory	Markku Karjalainen, Tuuli Oksanen
16:50	89	Charring Rates for Cross-Laminated Timber Panels Exposed to Standard and Parametric Fires	Kathinka Leikanger Friquin, Mads Grimsbu, Per Jostein Hovde
Room Verona Session 58 MECHANICAL MODELLING 4 Chair: Massimo Fragiacomò			
TIME	ID	TITLE	AUTHORS
15:50	536	3D Non-Linear Finite Element Modelling of Traditional Timber Connections	Bo-Han Xu, Abdelhamid Bouchaïr, Mustapha Taazount
16:10	508	Elasto-Plastic Pasternak Model Simulation of Static and Dynamic Loading Tests of Traditional Wooden Frames	Hideaki Tanahashi, Yoshiyuki Suzuki
16:30	249	F.E.M. Analysis of the Strength Loss in Timber Due to the Presence of Knots	Vanessa Baño, Francisco Arriaga, Azahara Soilán, Manuel Guaita
16:50	96	Strain Fields Around a Traversing Edge Knot in a Spruce Specimen Exposed to Tensile Forces	Jan Oscarsson, Anders Olsson, Bertil Enquist
Room Venezia Session 59 REPAIR AND MONITORING TECHNOLOGIES 2 Chair: Ernst Gehri			
TIME	ID	TITLE	AUTHORS
15:50	847	Ancient Roof Structures: Capacity of Battens and Repair Using Wood Based Panels	Andreas Meisel, Thomas Moosbrugger, Gerhard Schickhofer
16:10	830	Full-Scale Experiment on Reinforced Taiwanese Traditional Timber Frames	Wen-Shao Chang, Min-Fu Hsu
16:30	237	Nanostructured Materials for Durability and Restoration of Wooden Surfaces in Architecture and Civil Engineering	Clara Bertolini, Alan Crivellaro, Michal Marciniak, Tanja Marzi, Mikolaj Socha
16:50	779	Application of the Ultrasonic Testing for Condition Assessment of Traditional Wooden Building	Sang-Joon Lee, Kwang-Mo Kim, Ki-Bok Kim, Gyu-Hyeok Kim, Jun-Jae Lee
17:10	848	A Review of Non-Destructive Test Methods: Appropriate Choice of a Method for Use with Timber Beam Bridge Girders	John C. Moore, Rex Glencross-Grant, Robert Patterson
Room Riva Session 60 SEISMIC AND RACKING DESIGN 7 Chair: Bohumil Kasal			
TIME	ID	TITLE	AUTHORS
15:50	185	A Beam-Spring Analog Model for Seismic Analysis of Semi-Rigid Wood Diaphragms	WeiChiang Pang, David Rosowsky
16:10	173	The Development of a Hybrid Racking Panel – Appraisal of Methods for Strength and Stiffness Calculation	Kenneth Leitch, Robert Hairstans
16:30	171	Lateral Load Resistance of Cross-Laminated Wood Panels	Marjan Popovski, Johannes Schneider, Matthias Schweinsteiger
16:50	371	Lateral Load-Bearing Capacity of Wood Diaphragm in Hybrid Structure with Concrete Frame and Timber Floor	Shuo Li, Minjuan He, Suyi Guo, Chun Ni
17:10	461	Some Design Aspects on Anchoring of Timber Frame Shear Walls by Transverse Walls	Bo Källsner, Ulf Arne Girhammar, Johan Vessby
20:30	Conference Dinner		

Thursday 24

PARALLEL SESSIONS • MORNING

Room Gardalake			
Session 61 BUILDING SYSTEMS 5 Chair: Erol Karacabeyli			
TIME	ID	TITLE	AUTHORS
9:00	86	Glued Timber Trusses	Tuomo Poutanen, Caterina Ovazza
9:20	50	Beam and Post System for Non-Residential Multi-Storey Timber Buildings – Horizontal Stabilising System	Gabriela Tlustochowicz, Helena Johnsson, Ulf Arne Girhammar
9:40	49	Croatian Contemporary Prefabricated System for Wooden Family House	Vlatka Rajčić, Ivica Plavec
10:00	822	Wood-Concrete Skyscrapers	Jan-Willem van de Kuilen, Ario Ceccotti, Zhouyan Xia, Minjuan He, Shuo Li
10:20	732	Prediction of Dynamic Response of a 7-Storey Massive XLam Wooden Building Tested on a Shaking Table	Bruno Dujic, Klara Strus, Roko Zarnic, Ario Ceccotti
Room Trento			
Session 62 ARCHITECTURE AND STRUCTURES 2 Chair: Geert Ravenshorst			
TIME	ID	TITLE	AUTHORS
9:00	450	Expo 2010 Shanghai. Norwegian Pavilion	Rune B. Abrahamsen, Trond Egil Nyløkken
9:20	429	Low-Pitched Timber Roofs	Bernd Nusser, Martin Teibinger, Thomas Bednar
9:40	289	The John Hope Gateway Biodiversity Centre	Richard Harris, Paul Roberts, Ian Hargreaves
10:00	182	Potential of Wood in Suburban Renovation	Anu Soikkeli, Markku Karjalainen, Jouni Koiso-Kanttila
10:20	76	Roof Structure in Round Timber	Kjell A. Malo, Pål Ellingsbø
Room Verona			
Session 63 FAILURE ANALYSIS 1 Chair: Ian Smith			
TIME	ID	TITLE	AUTHORS
9:00	739	Cinematic Visualization of Failure Mechanisms in Timber Structures	Philipp Dietsch, Simon Schmid, Michael Merk, Stefan Winter
9:20	682	The Shear Strength, and Failure Modes, of Timber Joists Obtained from the Torsion Test Method	Aamir Khokhar, Hexin Zhang, Daniel Ridley-Ellis
9:40	524	Fracture of Spruce and Birch in the Rt Crack Propagation Direction Based on Digital Image Correlation Analysis of Esem Images	Pekka Tukiainen, Mark Hughes
10:00	281	Experimental Investigation of Moisture Driven Fracture in Solid Wood	Finn Larsen, Sigurdur Ormarsson, John Forbes Olesen
10:20	88	Brittle Failure of Timber Structures under Consideration of Uncertain Data	Christian Jenkel, Michael Kaliske
Room Venezia			
Session 64 REPAIR AND MONITORING TECHNOLOGIES 3 Chair: Eleftheria Tsakanika Thohari			
TIME	ID	TITLE	AUTHORS
9:00	749	Evaluation of Wooden Purlins Using the Drill Resistance Test	Yi-Jen Tseng
9:20	543	Structural Maintenance, Repair and Analysis of Historic Timber Joint Connections	Alexander Naughton, Julie Bregulla, Ken Watts
9:40	433	Experimental Assessment of the Durability of Bonded-In Rod Joints Used in the Rehabilitation of Timber Structures	João Custódio, Helena Cruz, James Broughton
10:00	205	Refurbishment of Traditional Timber Floors by Means of Wood – Wood Composite Structures Assembled with Inclined Screw Connectors	Albino Angeli, Roberto Tomasi, Maurizio Piazza, Mariapaola Riggio
10:20	743	Experimental Identification of Ancient Timber Elements by Destructive and Non-Destructive Tests on Small Elements and in Situ Inspection	Gianfranco De Matteis, Bruno Calderoni, Francesco Campitiello, Costantino Giubileo

10:40	754	The Ancient Timber Structures of the Royal Palace of Naples: Diagnosis, Analysis and Retrofitting	Beatrice Faggiano, Federico M. Mazzolani, Anna Marzo, Maria Rosaria Grippa
Room Riva			
Session 65 SEISMIC AND RACKING DESIGN 8 Chair: Marjan Popovski			
TIME	ID	TITLE	AUTHORS
9:00	160	Earthquake Behaviour of Modern Timber Construction Systems	Patrick Schädle, Hans Joachim Blaß
9:20	120	Wood Fibre Insulation Boards as Load-Carrying Sheathing Material of Wall Panels	Gunnar Gebhardt, Hans Joachim Blaß
9:40	834	A Proposal for a Standard Procedure to Establish the Seismic Behaviour Factor q of Timber Buildings	Ario Ceccotti, Carmen Sandhaas
10:00	674	Cyclic Tests of Full-Scale Wood Framed Constructions	Haibei Xiong, Jiahua Kang, Xilin Lu, Chun Ni
10:20	797	Effect of Horizontal Diaphragm and Column-End Joints on Ultimate Seismic Performance of Full-Sized 3-Story Wood Houses on Shaking Table	Takahiro Tsuchimoto, Naohito Kawai, Hiroshi Isoda, Tatsuya Miyake, Takafumi Nakagawa, Masahiro Inayama, Kaori Fujita, Hidemaru Shimizu
10:40	Coffee Break		

GENERAL SESSION**Room Rovereto**

TIME		PRESENTER
11:20	Closing words	Ario Ceccotti
11:35	Announce WCTE 2014	Tomi Toratti
11:45	Presentation of WCTE 2012 Auckland	Auckland Organising Committee
12:00-14:00	Closing lunch	