

5th International Conference on Structural Integrity

Funchal, Madeira, Portugal

28 August - 1 September 2023

<http://www.icsi.pt>

ICSI2023 Programme

Programme Overview


	Monday 28/08	Tuesday 29/08	Wednesday 30/09	Thursday 31/08	Friday 01/09
8:00-9:00		REGISTRATION			
9:00-9:30		OPENING SESSION	REGISTRATION	REGISTRATION	CONFERENCE TOUR "Madeira Sight Seeing" check website
9:30-10:05		PLENARY LECTURE I 9:30 – 10:15	PLENARY LECTURE II 9:30 – 10:15	PLENARY LECTURE III	
10:05-10:40		COFFEE-BREAK 10:15 – 10:50	COFFEE-BREAK 10:15 – 10:50	PLENARY LECTURE IV	
10:40-11:10				COFFEE-BREAK	
11:10-12:40		Session 1A 10:50 – 12:40	Session 4A 10:50 – 12:40	Session 7A 11:10-12:40	
		Session 1B 10:50 – 12:40	Session 4B 10:50 – 12:40	Session 7B 11:10-12:40	
		Session 1C 10:50 – 12:40	Session 4C 10:50 – 12:40	Session 7C 11:10-12:40	
12:40-14:00		LUNCH	LUNCH	LUNCH	
14:00-15:30		Session 2A	Session 5A	Session 8A	
		Session 2B	Session 5B	Session 8B	
		Session 2C	Session 5C	Session 8C	
15:30-16:00		COFFEE-BREAK	COFFEE-BREAK	COFFEE-BREAK	
16:00-17:30	REGISTRATION 17:00 – 18:00	Session 3A	Session 6A	Session 9A	
		Session 3B	Session 6B	Session 9B	
		Session 3C	Session 6C	Session 9C	
17:30-18:00				CLOSING SESSION	
18:30-19:30		WELCOME COCKTAIL			
19:30-23:00				CONFERENCE BANQUET	

Technical Program




















August 3rd, 2023 version

Tuesday, 29 August 2023



















Tue, 09:00 - 09:30	OPENING SESSION	Room Sunset
Welcome to Participants (Conference Co-Chairs) Welcome Address Representative of the University of Madeira		

Tue, 09:30 - 10:15	PLENARY LECTURE I	Room Sunset
Fundamental insights into the hydrogen embrittlement of pipelines in high-pressure gaseous environments Frank Cheng University of Calgary, Canada Chair: Pedro Moreira		













Tuesday, 10:15 - 10:50	COFFEE-BREAK	Lounge
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Tue	Session 1A 10:50-12:40	Room Sunset	Tue	Session 1B 10:50-12:40	Room Lagoon I	Tue	Session 1C 10:50-12:40	Room Lagoon II
TOPIC: Symposium N.TC21 Hydrogen embrittlement of metals: Problems and solutions Chair: Jun Song, Milos B. Djukic, S. Kovacevic, Dejan Zagorac			TOPIC: Symposium A. Fatigue Crack Growth – experimental, theoretical and numerical approach Chair: Grzegorz Lesiuk			TOPIC: Testing Chair: Gonalo Cipriano, Pedro Moreira		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
#030 	Multiscale Modeling of Hydrogen Clustering and Bubbling in BCC Metals Jun Song		#018 	Crack initiation and growth in compacted graphite iron: effect of graphite inclusions Xingling Luo, Konstantinos P. Baxevanakis, Vadim V. Silberschmidt		#170 	The Effect of Temperature on Power Transformers Continuously Transposed Cables Mechanical Performance G. Cipriano, E. Emanuel Almeida, R. Castro Lopes, A. Pedro Lima, A. A. Soto-Rodriguez, Daniel F.O. Braga, Miguel O. Gomes, Pedro J. Sousa	
#152 	Theoretical investigations and QM modelling of hydrogen-based materials Dejan Zagorac, Jelena Zagorac, Milos B. Djukic, Tamara Škundrić, Milan Pejić, Burak Bal, Christian J. Schön		#046 	Fatigue crack growth rate at the interface of steel and structural adhesive in DCB specimens with thick bondline Rahul Iyer Kumar, Wim De Waele		#166 	Investigation of full-field material properties of welded joint using DIC Kořo, T., Chmelko, V.	
#019 	Phase-field modelling of environmentally induced damage S. Kovacevic, M. Makuch, E. Martinez-Paneda		#055 	Fatigue Crack Growth Study on the Critical Location of the Portuguese Air Force Epsilon TB-30 Aircraft T. Barros, V. Infante, P. Gamboa, L. Alexandre, A. Moura		#171 	Experimental characterization of inflation mechanical properties of aortic wall Hugo Mesquita, Rodrigo Valente, Daniela Azevedo, Francisco Queirós de Melo, Pedro Sousa, Tiago Domingues, Paulo Tavares, José Xavier, Pedro Moreira	
#095 	First-principles study on the hydrogen absorption energy in Fe-Cr-Ni austenitic systems: Effect of Cr and Ni content Junichiro Moriyama, Osamu Takakuwa, Masatake Yamaguchi, Yuhei Ogawa, Kaneaki Tsuzaki		#057 	Study of Fatigue Crack Propagation in Modified CT Specimens using Artificial Neural Networks B. Santos, T. Barros, V. Infante, R. Baptista		#172 	Experimental monitoring of falling metallic shelter during seismic simulation Francisco Afonso, Pedro Sousa, Nuno V. Ramos, Alexandre Brás Santos, Paulo Tavares, Pedro Moreira, Sajjad Hosseini, João Gomes Ferreira	
#008 	Modelling fatigue life and hydrogen embrittlement of bcc steel with unified mechanics theory Hsiao Wei Lee, Milos B. Djukic, Cemal Basaran		#063 	Fatigue crack closure of nuclear steels: effect of load ratios Théotime Asselin, Gilbert Hénaff, Olivier Ancelet, Guillaume Benoit, Florence Hamon		#174 	Development of a photogrammetric system for railway retaining walls analysis Francisco Afonso, Pedro Sousa, Nuno Viriato, Francisco Barros, Paulo Tavares, Pedro Moreira	
			#201 	Probabilistic Fatigue Resistance Curves for Structural Steel Based on Dislocation Density António M. Mourão, Iara G. Oliveira, J.A.F.O. Correia, Túlio Bittencourt, Rui Caada		#176 	3D DIC deformation monitoring of rotor blades with moving cameras Pedro Sousa, Francisco Barros, Rodrigo Valente, Tiago Domingues, Paulo Tavares, Pedro Moreira	
			#183 	The Effect of Strain-Rate on the Mechanical Performance of Direct Energy Deposition and Hybrid Direct Energy Deposition, Selective Laser Melting Daniel F.O. Braga, Lucas Azevedo, G. Cipriano, Miguel O. Gomes, Pedro J. Sousa, Pedro M.G.P. Moreira		#142 	The effect of artificial ageing on corrosion-induced micro-cracking of Al-Cu-Li 2198 alloy Margarita Christina Charalampidou, Nikolaos Alexopoulos, Stavros Kourkoulis	

Monday, 12:40 - 14:00	LUNCH	Restaurant
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Tue	Session 2A 14:00-15:30	Room Sunset	Tue	Session 2B 14:00-15:30	Room Lagoon I	Tue	Session 2C 14:00-15:30	Room Lagoon II
TOPIC: Symposium N.TC21 Hydrogen embrittlement of metals: Problems and solutions Chair: Frank Cheng, Tom Depover, Antonio Alvaro, Osamu Takakuwa Milos B. Djukic			TOPIC: Symposium A. Fatigue Crack Growth – experimental, theoretical and numerical approach Chair: Grzegorz Lesiuk			TOPIC: Symposium B. Mechanical behaviour and modelling of wood and timber structures Chair: Almudena Majano-Majano, António Lara-Bocanegra, Rostand Moutou-Pitti, and José Xavier		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
#139 	Study of hydrogen atom distribution at metallurgical features and mechanical defects contained in pipeline steels by scanning Kelvin probe force microscopy and finite element modelling Qing Hu, Frank Cheng		#113 	Fatigue fracture characterization of ALSI7MG0.6 Szymon Dziuba, Grzegorz Lesiuk, Konrad Gruber		#005 	Understand the creep behavior of temperate species in 4-points bending test Claude Feldman Nziengui, Chaima Jaafari, Bernard Odounga, Nicaise Boussougou, Rostand Pitti, Sebastien Durif, Joseph Gril	
#062 	Evaluation of the tensile properties of X65 pipeline steel in compressed gaseous hydrogen using hollow specimens Alessandro Campari, Florian Konert, Jonathan Nietzke, Oded Sobol, Nicola Paltrinieri, Antonio Alvaro		#127 	Bainitic rails intended for highly-loaded tracks – the nature of fatigue cracking mechanisms in mixed mode loading conditions Aleksandra Królicka, Grzegorz Lesiuk, Dariusz Rozumek, Roman Kuziak, Krzysztof Radwański, Michał Smolnicki, Szymon Dziuba, A.M.P. de Jesus, Jose A.F.O. Correia		#107 	Silver birch and black alder non-destructive wood quality evaluation Benas Šilinskas, Darius Danusevičius, Marius Aleinikovas	
#076 	Hydrogen embrittlement determination of L485MB pipeline steel and its heat affected zone via notched tensile tests Laura De Pue, R. Jubica, Lisa Claeys, Somsubhro Chaudhuri, Tom Depover, Wim De Waele, Kim Verbeken, Stijn Hertelé		#159 	Probabilistic fatigue crack growth rates of structural steels based on modified UniGrow model Bruno Pedrosa, José Correia, Grzegorz Lesiuk, Joel de Jesus, Ricardo Branco, Carlos Rebelo		#122 	Direct identification of fracture parameters of wood in Mode I by Digital Image Correlation Olivier Cochet, José Xavier, Rui Martins, Rostand Moutou Pitti	
#077 	Hydrogen-assisted degradation of an X70 pipeline steel evaluated by single edge notched tension testing Margo Cauwels, Robin Depraetere, Wim De Waele, Stijn Hertelé, Tom Depover, Kim Verbeken		#068 	Material characteristics relevant for resistance to fatigue crack propagation in structural steels Tomáš Vojtek, Radek Kubíček, Pavel Pokorný, Pavel Hutař		#154 	Mechanical behaviour and failure modes of the selected carpentry joints in flexural elements Anna Karolak, Jerzy Jasieńko	
#081 	The effect of austenitizing temperature on the hydrogen embrittlement of API 5L X100 pipeline steel Reza Khatib Zadeh Davani, Ehsan Entezari, Sandeep Yadav, Jhon Freddy Aceros Cabezas, Jerzy Szpunar		#009 	Prediction of crack paths for an inclined edge crack including crack-face friction and subjected to mixed mode loading Sjoerd Hengeveld, Davide Leonetti, Johan Maljaars, Bert Snijder		#168 	Experimental investigation of the bending behavior of Spanish Eucalyptus globulus LVL Majano-Majano A, Gonzalo-Calderón L1, Lara-Bocanegra AJ, Aira-Zunzunegui JR, Xavier J	
#082 	Crack growth resistance of actual pipe welds exposed to hydrogen and natural gas mixture and pure hydrogen under high pressure Guillaume Benoit, Denis Bertheau, Gilbert Henaff, Laurent Alvarez		#114 	Use of low-quality wood species by densification in load bearing veneer-based composites Tolgay Akkurt, Jaan Kers, Anti Rohumaa		#200 	Experimental characterization of apple skin Rafael Araújo; Fábio Pereira; José Xavier; Nuno Dourado; José Morais	

Tuesday, 15:30 - 16:00	COFFEE-BREAK	Lounge
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Tue	Session 3A 16:00-17:45	Room Sunset	Tue	Session 3B 16:00-17:45	Room Lagoon I	Tue	Session 3C 16:00-17:45	Room Lagoon II
TOPIC: Symposium N.TC21 Hydrogen embrittlement of metals: Problems and solutions Chair: Tom Depover, Jun Song, Dejan Zagorac, Osamu Takakuwa, Milos B Djukic			TOPIC: Symposium D. SHM and Damage identification – prediction of structural response Chair: Andrzej Katunin, Hernani Lopes and Jürgen Bär			TOPIC: Symposium C. Failure analysis Chair: Virginia Infante, Manuel Freitas and Cesar Azevedo		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
#052 	Hydrogen-accelerated/decelerated fatigue crack propagation in Ni-based superalloy 718 Osamu Takakuwa, Yuhei Ogawa		#003 	Effect of Sensors Locations and Magnitudes of Dynamic Loads on Dynamical Properties in Structural Health Monitoring, Mohammad Miah, Werner Lienhart		#006 	Analytical characterisation in Mode I fracture of adhesively bonded Double Cantilever Beam mixed glue joints Cédric Horphé Ndong Bidzo, Claude Feldman Pambou Nziengui, Serge Ekomy Ango, Samuel Ikogou, Beat Kaiser, Rostand Moutou Pitti	
#087 	Effect of Nickel on the hydrogen embrittlement, diffusion, and trapping properties of ferritic-martensitic dual-phase low alloy steel in tempered condition Esteban Rodoni, Tom Depover, Kim Verbeken, Mariano Iannuzzi		#022 	Exploiting DIC-based full-field receptances in mapping the defect acceptance for dynamically loaded components Alessandro Zanmarini		#011 	Seawater degradation: effects on damage properties of polymer-based composite structures Norman Osa-uwagboe, Vadim Silberschmidt, Emrah Demirci	
#079 	Hydrogen interaction with an equiatomic CoCrFeMnNi high entropy alloy Lisa Claeys, Hauke Springer, Mohammadhossein Barati Rizi, Kim Verbeken, Tom Depover		#058 	Determining the Length of Short Surface Cracks with DC Potential Drop Measurements Naveen Kumar Kanna, Jürgen Bär		#015 	A Crack Problem in a Complete Contact Configuration Hyung-Kyu Kim	
#075 	Advances in Quantitative Hydrogen Embrittlement Assessment Joshua Jackson, Craig Tod, Milos B. Djukic, Bryan Fahimi		#054 	Crack Detection and Crack Length Measurement in Round Specimen using Multiple Potential Drop Measurements Jürgen Bär		#078 	Dynamic transient analysis of the reactor Core Barrel during LB LOCA Yaroslav Dubyk, Oleksii Ishchenko, Vladislav Filonov	
#045 	Hydrogen-assisted fatigue crack propagation in ferritic iron: An overview of macroscale behavior and microscale mechanisms Yuhei Ogawa, Osamu Takakuwa		#056 	Application of Artificial Neural Networks to Aircraft Mission Classification T. Barros, L. Alexandre, V. Infante, P. Gamboa, A. Moura		#129 	Determining the elastoplastic properties and analysing the fracture behaviour of thin aluminium alloy welds Z. Silvayeh, J. Domitner, M. Müller, P. Auer, C. Sommitsch, P. Mayr	
#089 	A Comparison Study on Environmental Effects of Natural and Synthetic Fiber Reinforced Polymer Composite (NFRPC) for their Potential Application Dillip Kumar Bisoyi, Chinmayee Dash		#023 	On the use of full-field receptances in inverse vibro-acoustics for airborne structural dynamics Alessandro Zanmarini		#153 	Mechanical Characterization of an Asymmetric Sandwich Composite Composed by Stone and Cork João Marques, Virginia Infante, Pedro Amaral	
			#017 	Towards detecting the strong vertical shock induced by a shallow earthquake Koji Uenishi		#163 	Failure analysis of a composite structural spar and rib-to-skin joints Wojciech Skarka, Ramesh Kumpati, Michał Skarka	

Tuesday, 18:30 - 19:30	WELCOME RECEPTION
COCKTAIL RECEPTION VidaMar Hotel	



















Wednesday, 30 August 2023

Wed, 09:30 - 10:15	PLENARY LECTURE II	Room Sunset
Roadmaps to Sustainable Civil Engineering Infrastructure through Structural Health Monitoring Su Taylor Queen's University Belfast, Northern Ireland Chair: Paulo Tavares		



















Wednesday, 10:15 - 10:50	COFFEE-BREAK	Lounge
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Wed	Session 4A 10:50-12:40	Room Sunset	Wed	Session 4B 10:50-12:40	Room Lagoon I	Wed	Session 4C 10:50-12:40	Room Lagoon II
TOPIC: Symposium N.TC21 Hydrogen embrittlement of metals: Problems and solutions Chair: Milos B. Djukic, Tom Depover, Masoud Moshtaghi, Yuhei Ogawa, Burak Bal			TOPIC: Modelling Chair: Luís Borrego			TOPIC: Testing/Experimental Chair: Gonçalo Cipriano		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
#192		Recent developments in understanding the mechanisms of hydrogen embrittlement and trapping behaviour in Al alloys Masoud Moshtaghi	#131		Impact Analysis of an Adhesive Joint Using a Meshless Method L.D.C. Ramalho, I.J. Sánchez-Arce, Diogo C. Gonçalves, R.D.S.G. Campilho, Jorge Belinha	#177		Advanced Optical Sensing Technologies: Methodologies and Applications Job Silva, Tiago Domingues, Nuno Viriato, João Nunes, Pedro Sousa, Paulo Tavares, Pedro Moreira
#187		The HELP+HEDE model for hydrogen embrittlement in metals: New insights and experimental/modeling confirmations Milos B. Djukic, Jovana Perisic, Muhammad Wasim, Gordana Bakic, Aleksandar Sedmak, Bratislav Rajcic	#119		Is Fluid-Structure Interaction the gold-standard method to perform patient-specific in-silico analysis on ascending thoracic aortic aneurysms? André Mourato, Rodrigo Valente, José Xavier, Moisés Brito, Stéphane Avril, António Tomás, José Fragata	#179		Monitoring system for the Leixões bascule bridge Nuno Viriato, Job Silva, Susana Aguiar, Pedro Sousa, Andreia Flores, Pedro Moreira, Mário Vaz, Luís Cunha, Dantas da Rocha, António Tavares
#149		Investigations of the hydrogen – defect interactions by Molecular Dynamics Mehmet Fazil Kapci, Burak Bal	#120		Patient-Specific Wall Displacement Analysis: A Comparative Study of Fluid Structure Interaction, Computation Fluid Dynamic, and computation Solid Mechanics on Ascending Thoracic Aorta Aneurysm Rodrigo Valente, André Mourato, José Xavier, Moisés Brito, Stéphane Avril, António Tomás, José Fragata	#165		Load analysis on the drone protection cage increasing collision resistance Wojciech Skarka, Magdalena Szczepanek, Maciej Pośpiech, Aleksander Jassak, Jakub Żymetka, Michał Pokrzywa, Michał Górka, Roman Niestrój
#124		A study of the effects of hydrogen on martensitic advanced high-strength steels Carlo Maria Belardini, Giuseppe Macoretta, Marco Beghini, Leonardo Bertini, Bernardo Disma Monelli, Renzo Valentini	#012		Design of a New Passenger Train Seat Structure using Finite Element Analysis and Design Optimization Algorithms F. Alves, J. Marques, J.A. Madeira, R. Baptista, V. Infante	#105		Investigation on geometric imperfections of tensile test specimens using optical full-field measurements and digital twin-based simulations T. Fekete, D. Antók, L. Tatár, P. Berecki
#088		Definition of a test-independent hydrogen embrittlement index for advanced high-strength steels Giuseppe Macoretta, Carlo Maria Belardini, Marco Beghini, Bernardo Disma Monelli, Renzo Valentini	#133		eXtended Finite Element Method applied to the tensile strength evaluation of scarf adhesive joints I.R.S. Araújo, G.J.C. Pinheiro, R.J.B. Rocha, R.D.S.G. Campilho, L.D.C. Ramalho, K. Madani	#040		Advances in aluminium alloys performances applied to the next generation of aircraft wing Erembert Nizery, Jean-Christophe Ehrström, Marion Bellavoine
103		Hydrogen interactions with dislocations in relation to hydrogen embrittlement of metals V.G. Gavriljuk, V.M. Shyvaniuk, S.M. Teus	#137		Modelling the high-speed punching process of copper sheets D. Gomboc, P. Auer, M. Unterrainer, Z. Silvayeh, C. Sommitsch, J. Domitner	#070		High temperature properties of Fe-10Al-4Cr-4Y2O3 nanocomposite Petr Dymáček, Milan Jarý, Natália Luptáková, Štěpán Gamanov, Lenka Kunčická, Radim Kocich, Bohuslav Mašek, Jiří Svoboda
#148		Effect of strain rate and hydrogen on the mechanical behaviors of Aluminium alloys Mehmet Furkan Baltacıoğlu Burak Bal	#091		Investigating correlation of collected coordinate measurement data and the grid size in the residual stresses computed by the contour method Mahjoubeh Sistaninia, Hans-Peter Gänser, Jürgen Maierhofer, Thomas Antretter	#108		Considering environmental effects on porous concrete applications: an experimental investigation Aikaterini Marinelli, Lukman Puthiyaveetil Haroon Rasheed

Wednesday, 12:40 - 14:00	LUNCH	Restaurant

Wed	Session 5A 14:00-15:30	Room Sunset	Wed	Session 5B 14:00-15:30	Room Lagoon I	Wed	Session 5C 14:00-15:30	Room Lagoon II
TOPIC: Symposium N.TC21 Hydrogen embrittlement of metals: Problems and solutions Chair: Tom Depover, Masoud Moshtaghi, Margo Cauwels, Esteban Rodoni			TOPIC: Symposium F. Structural integrity of 3D printed metal components Chair: Miloslav Kepka and Vladimír Chmelko			TOPIC: Symposium M. Fatigue and Structural Integrity Chair: Luís Reis, José Correia and Filippo Berto		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
#080 	Increasing the resistance to hydrogen embrittlement of martensitic medium carbon steels Margot Pinson, Kim Verbeken, Tom Depover		#016 	Applications of additive technologies in the maintenance of machinery and equipment Miloslav Kepka, Miroslav Zetek, Zdenek Chval, Ivana Zetkova, Yusuf Bakir, Martin Zahalka, Tomas Kalina, Michal Krizek		#010 	Effect of heat treatment on the microstructure and fatigue properties of laser beam welded cp-Ti joints Marcin Wachowski, Robert Kosturek, Krzysztof Grzelak, Lucjan Śniezek, Ireneusz Szachogłuchowicz	
#032 	Influence of Mo content on susceptibility of medium carbon martensitic steels to hydrogen embrittlement Magdalena Eškinja, Gerald Winter, Jürgen Klarner, Holger Schnideritsch, Gregor Mori, Masoud Moshtaghi		#034 	Fatigue analysis of AISi10Mg recycled powder for additive manufacturing Martin Matušů, Jakub Rosenthal, Jan Papuga, Jan Šimota, Ludmila Růžičková, Libor Beránek		#072 	Surface severe plastic deformation for improved fatigue properties and applications in the hydrogen sector Thierry Grosdidier, Marc Novelli	
#038 	Role of prior austenite grain structure in hydrogen diffusion, trapping and embrittlement mechanisms in as-quenched martensitic steels Renata Latypova, Eric Fangnon, Olli Nousiainen, Sakari Pallaspuro, Jukka Kömi		#084 	Verifying of the different lattice structure on the material stability produced by additive manufacturing made from Inconel 718 Miroslav Zetek, Josef Volák, Ludmila Kučerová, Miloslav Bílý, Ivana Zetková, Yusuf Bakir, Miloslav Kepka		#083 	Application of TCD approach to fatigue life prediction of notched high strength steel specimens Kamila Kozáková, Jan Klusák, Stanislav Seitl	
#014 	Hydrogen effects in high-strength lath martensite steel bars Mihaela Iordachescu, Patricia Santos, Andres Valiente		#123 	Fatigue life assessment of WAAM-processed Ti-6Al-4V Nikolai Kashaev, Anton Odermatt, Pedro Álvarez		#086 	Modelling Ageing and Fatigue for Structural Integrity Calculations of Large-Scale Pressure Systems Fekete, Tamás	
#067 	Evaluating hydrogen embrittlement susceptibility of a duplex stainless steel L.B. Peral, A. Díaz, C. Rodríguez, J.M. Alegre, I.I. Cuesta		#085 	Improving of mechanical properties of printed maraging steel Ivana Zetková, Miroslav Zetek, Miloslav Kepka Jr., Petr Bohdan, Karel Trojan, Nikolaj Ganev, Jiří Čapek, Ludmila Kučerová, Miloslav Kepka		#092 	Very high cycle fatigue behavior of high strength steels subjected to high frequency loading Jan Klusák, Kamila Kozáková, Stanislav Seitl	
#065 	Comparison of hydrogen embrittlement susceptibility of martensitic stainless steel subjected to conventional and cryogenic heat treatment Mirjam Bajt Leban, Bojan Zajec, Bojan Podgornik, Tadeja Kosec		#094 	Multiaxial fatigue of selected additively manufactured metals Vladimír Chmelko, Matúš Margetin		#064 	Study of Relevance of Alloying Elements in Estimating Cyclic Yield Stress and Ramberg-Osgood Parameters of Steels Tea Marohnić, Ela Marković, Robert Basan	

Wed, 15:30 - 16:00	COFFEE-BREAK	Lounge
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Wed	Session 6A 16:00-17:30	Room Sunset	Wed	Session 6B 16:00-17:30	Room Lagoon I	Wed	Session 6C 16:00-17:30	Room Lagoon II
TOPIC: Symposium N.TC21 Hydrogen embrittlement of metals: Problems and solutions Chair: Frank Cheng, Akihiko Fukunaga, Guillermo Álvarez, Tom Depover			TOPIC: NDT & SHM Chair: Luís Borrego			TOPIC: Symposium M. Fatigue and Structural Integrity Chair: Luís Reis, José Correia and Filippo Berto		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
#028 	Hydrogen embrittlement behavior of iron-based superalloy A286 Akihiko Fukunaga		#069 	Application features of distributed fiber-optic sensors based on Rayleigh scattering for gradient strain field measurement Serovaev G.S., Matveenko V.P., Kosheleva N.A.		#102 	Energy field intensity-based approach for notch fatigue analysis of 7050-T6 aluminium alloy under multiaxial loading R. Branco, J.D. Costa, L.P. Borrego, F. Berto	
#112 	Hydrogen embrittlement in a 2205 duplex stainless steel plate: Influence of specimen orientation V. Arniella, J. Belzunze, C. Rodríguez		#161 	Ballistic Impact Detection via Physics-Informed Machine Learning: A Methodology Integrating Neural Networks with Reduced Order Model Updating Vasiliki Panagiotopoulou, Claudio Sbarufatti, Marco Giglio		#128 	An analysis of notch sensitivity in the VHCF fatigue regime of S690 steel Rita Dantas, Michael Gouveia, Filipe G. A. Silva, Felipe Fiorentin, Abílio de Jesus, José A. F. O. Correia, Grzegorz Lesiuk	
#115 	Hydrogen embrittlement resistance of additively manufactured SS316L: Effects of post-treatments and testing conditions G. Álvarez, Z. Harris, K. Wada, C. Rodríguez, E. Martínez-Pañeda		#060 	Self-sensing metallic material based on piezoelectric ceramic microparticles envisaging structural health monitoring applications Pedro M. Ferreira, Miguel A. Machado, Marta S. Carvalho, Catarina Vidal		#150 	Numerical simulation of the processes of cyclic loading of samples made using additive manufacturing technology Mullakhmetov Maksim N., Ilinykh Artem V., Pankov Alexandr M., Lykova Anastasiya V., Permyakov Gleb L.	
#117 	Hydrogen embrittlement of tempered S41500 martensitic stainless steel D. Harandizadeh Najafabadi, D. Thibault, M. Brochu		#162 	SAMAS 2: Structural Health and Ballistic Impact Monitoring and Prognosis on a Military Helicopter Vasiliki Panagiotopoulou, Claudio Sbarufatti, Marco Giglio		#167 	Data-driven spectral damage estimator for non-stationary vibration loading Arvid Trapp, David Fräulin, Marcin Hinz, Peter Wolfsteiner	
#111 	Post-mortem estimation of hydrogen embrittlement threshold on sustained-load test coupons using fractography and statistics of extreme values Simon Laliberté-Riverin, Jonathan Bellemare, Frédéric Sirois, Myriam Brochu		#178 	Predictive Analysis of Structural Damage in Underwater Structures: A Case Study Approach using Neural Networks Alexandre Santos, Tiago Domingues, Hugo Mesquita, Rogério Lopes, Marco Parente, Pedro Moreira		#186 	Tension/Torsion UFT for Different Axial/Shear Stress Ratios Luis Reis, Henrique Lopes, Pedro Costa, Manuel Freitas	
			#173 	Surface defect detection systems for railway components Francisco Afonso, Pedro Sousa, Susana Aguiar, João Nunes, Nuno Viriato, Frederico P. Direito, Paulo Tavares, Pedro Moreira		#135 	Fatigue behaviour and numerical assessment of welded EN AW 7020 tube joints under multiaxial loading Jenny Köckritz, Thomas Fürstner, Robert Szlosarek, Matthias Kröger	
			#194 	Smart Light Bridge Monitoring Ignacio Poy				

Thursday, 31 August 2023



















Thu, 09:30 - 10:05	PLENARY LECTURE III	Room Sunset
Promoting multiscale fatigue to design reliable and sustainable structures José Correia University of Porto, Portugal Chair: Grzegorz Lesiuk		


















Thu, 10:05 - 10:40	PLENARY LECTURE IV	Room Sunset
Advanced materials under extreme conditions: Structure prediction, structure-property relationship and mechanical properties Dejan Zagorac Institute of Nuclear Sciences "Vinča", University of Belgrade, Serbia Chair: Milos Djukic		
























Thursday, 10:40 - 11:10	COFFEE-BREAK	Lounge
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Thu	Session 7A 11:10-12:40	Room Sunset	Thu	Session 7B 11:10-12:40	Room Lagoon I	Thu	Session 7C 11:10-12:40	Room Lagoon II
TOPIC: Symposium N.TC21 Hydrogen embrittlement of metals: Problems and solutions Chair: Lisa Claeys, Liese Vandewalle, Birhan Sefer, Masoud Moshtaghi, Milos B. Djukic			TOPIC: Symposium D. SHM and Damage identification – prediction of structural response Chair: Andrzej Katunin, Hernani Lopes and Jürgen Bär			TOPIC: Symposium E. Structural Integrity of steel/FRP & concrete composite structures Chair: Xin Haohui, Jose Correia, Jun He, Rong Liu and Zhihua Xiong		
			Ref:	Title and Author (s)		Ref:	Title and Author (s)	
#029	 Characteristics of local plasticity and boundary character in hydrogen-assisted intergranular and intergranular-like fracture paths M. Koyama, T. Chen, T. Chiba, K. Takai		#090	 Experimental investigation of modulation transfer technique for damage detection of structures Andrzej Klepka, Jakub Górski, Kajetan Dziedzicch		#099	 Effect of polymer shot addition on mechanical and physical properties of cement composite mortar Marcin Małek, Waldemar Łasica, Michał Gregorczyk, Emil Kardaszuk	
#050	 Damage evolution investigation of two hydrogen-charged pipeline steels using X-ray micro-CT Robin Depraetere, Wim De Waele, Margo Cauwels, Tom Depover, Kim Verbeken, Stijn Hertelé		#134	 The thermal influence on the material durability of additive manufactured glass fibre reinforced polymer with embedded fiber Bragg grating sensor Magdalena Mieloszyk, Ruta Rimasauskiene, Marius Rimasauskas, Anita Orłowska		#035	 Investigation of the hybrid beam behaviour during three-point bending test Jaroslav Václavík, Jan Chvojan	
#106	 Comparative study of hydrogen uptake in low alloyed carbon and austenitic stainless steels under cathodic hydrogen charging in aqueous electrolyte and gaseous hydrogen charging Daria Pałgan, Markus Uhlirsch, Nuria Fuertes, Birhan Sefer		#145	 On the identifiability of sheet metal anisotropic plasticity constitutive parameters using the Arcan test and full-field measurements J. Henriques, A. Andrade-Campos, J. Xavier		#036	 Damage analysis of the prestressing strand-wires from a 40 years old urban viaduct Maricely de Abreu, Mihaela Iordachescu, Andrés Valiente	
#053	 Study of hydrogen trapping at carbides after gaseous charging at elevated temperatures and its impact on mechanical properties Liese Vandewalle, Tom Depover, Kim Verbeken		#184	 Savitzky-Golay Smoothing and Differentiation Filters for Damage Identification in Plates J. V. Araújo dos Santos, H. Lopes		#175	 Experiments for a Reliability-Based Fatigue Analysis Applied in Leaf Spring Suspensions of Freight Wagons V.M.G. Gomes, N.M.P. Pinto, P.A Montenegro, J.A.F.O Correia, R. Calçada, A.M.P de Jesus	
#049	 Hydrogen trapping at micro/nano-sized secondary hardening precipitates Stefanie Pichler, Gregor Mori, Mahdih Safyari, Masoud Moshtaghi		#073	 Advanced Acoustic Emission Signal Processing Techniques for Structural Health Monitoring Claudia Barile, Giovanni Pappalettera, Vimalathithan Paramsamy Kannan, Caterina Casavola		#096	 Effect of CFRP Wraps on the Compressive Strength of Normal and Structural Lightweight Concrete Rami A. Hawileh, Hind Alharmoodi, Abdallah Hajjaj, Abdulaziz Aljarwan, Jamal Abdalla	
#066	 Fatigue fracture in advanced ultrahigh-strength steels tested under gaseous hydrogen charging Supriya Nandy, Sakari Pallaspuuro, Pekka Moilanen, Renata Latypova, Janne Pakarinen, Jukka Kömi, Elina Huttunen-Saarivirta		#125	 Residual mechanical properties and damage accumulation of fiberglass pipes during proportional multiaxial cyclic tests Artur Kuchukov, Artur Mugatarov, Oleg Staroverov, Elena Strungar, Ekaterina Chebotareva		#202	 Investigating the use of CFRP retrofitting techniques to extend the lifespan of existing metallic railway bridges João Arrojado, Anis Mohabeddine, José A. F. O. Correia, Diogo Ribeiro, Anna Rakoczy	

Thursday, 12:40 - 14:00	LUNCH	Restaurant
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Thu	Session 8A 14:00-15:30	Room Sunset	Thu	Session 8B 14:00-15:30	Room Lagoon I	Thu	Session 8C 14:00-15:30	Room Lagoon II
TOPIC: Symposium N.TC21 Hydrogen embrittlement of metals: Problems and solutions Chair: Tom Depover, Jun Song, Masoud Moshtaghi, Dejan Zagorac, Milos B. Djukic			TOPIC: Modelling Chair: Luis Borrego			TOPIC: Symposium E. Structural Integrity of steel/FRP & concrete composite structures Chair: Xin Haohui, Jose Correia, Jun He, Rong Liu and Zhihua Xiong		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
#130 	The critical expansion strain for the onset of structural integrity degradation due to high-temperature hydrogen attack of a carbon manganese steel R.J. Mostert, A van Zyl, C.C.E. Pretorius, V.M Mathoho		#140 	Multiscale modelling of mechanical behaviour of 3D printed continuous carbon fibre polymer composites under thermal loading Isyna Izzal Muna, Magdalena Mieloszyk		#100 	Ultimate Strength Evaluation of Woven Fiber Reinforced Polymer Composites Using Homogenization Theory Wang Dan, Xin Haohui, Gao Qinglin, Zhang Hengyu	
#189 	Effect of seawater corrosion on the mechanical behavior of S690 steel Ana Dantas, Rita Dantas, Gonçalo P. Cipriano, Abílio de Jesus, Grzegorz Lesiuk, Carlos Fonseca, Pedro Moreira, José A.F.O. Correia		#144 	Kissing Bond and Interfacial Quality Detection in Adhesive Bonds Using Hsu-Nielsen Source and AE Sensors Callum Selfridge, Cameron Gerrie, Sean Gerrie, Anil Prathuru, Ghazi Droubi		#190 	Finite Element Modeling of Concrete Prisms Strengthened with NSM and EBR CFRP Laminate Systems Ahmed H. Selim, Shahed Alhomsy, Haider Hasan, Jamal A. Abdalla, Rami A. Hawileh	
#195 	The role of hydrogen in the corrosion-induced reduction of plane-stress fracture toughness and strain-induced intergranular cracking of AA2024 C.C.E. Pretorius, R.J. Mostert, C-M. Charalampidou, N.D. Alexopoulos		#160 	Properties and applications of cold sprayed Ti-6Al-4V coatings in additive manufacturing Wojciech Żórawski, Medard Makrenek, Anna Góral, Dominika Soboń		#093 	Performance of a polymeric coating material applied to a concrete structure affected by internal expansive chemical reactions João Custódio, Helena Silva, Maria Paula Rodrigues, Susana Cabral-Fonseca, António Bettencourt Ribeiro, Filipa Morais	
	Round table with a panel discussion 14:45 - 15:30 h		#071 	Predicting pure and mixed mode plastic zones using finite elements and artificial neural networks analysis R. Baptista, V. Infante		#191 	Behaviour of normal and recycled aggregates beams strengthened with different types of externally bonded shear reinforcement Jamal A. Abdalla, Rami A. Hawileh, Maha Ass'ad, S. S. Ahmed, A. Omer, O. Abdulkadeer	
			#182 	Crashworthiness topology optimisation of a crash box to improve passive safety during a frontal impact Christian J.G. Silva, Rogério Lopes, Tiago Domingues, Marco Parente, Pedro Moreira		#097 	Effect of increasing the number of anchors on the flexural performance of FRP-strengthened RC beams Rami A. Hawileh, Maha Assad, Jamal Abdalla	
			#181 	Exploring Structural Simulation Methods for Railway Systems: A Review Tiago Domingues, Job Silva, Alexandre Santos, Pedro Moreira		#203 	Probabilistic Fatigue Analysis of Riveted Bridge Connections: Evaluating the Effect of Fatigue Accumulation Rules João Nuno Silva, António Mourão, Cláudio Horas, J.A.F.O. Correia, Rui Calçada	

Thursday, 15:30 - 16:00	COFFEE-BREAK	Lounge
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Thu	Session 9A 16:00-17:30	Room Sunset	Thu	Session 9B 16:00-17:30	Room Lagoon I	Thu	Session 9C 16:00-17:30	Room Lagoon II
TOPIC: Manufacturing Chair: Virginia Infante			TOPIC: Fracture and Fatigue Chair: Paulo Tavares			TOPIC: Computational and Analytical Chair: Luís Reis		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
#059 	Joint Efficiency of Friction Stir Welded Additively Manufactured Thermoplastic Components Pedro Rendas, Lígia Figueiredo, Pedro Melo, Bruno Soares, Catarina Vidal		#101 	Notch effect on the fatigue behaviour of AlSi10Mg aluminium alloy obtained by additive manufacturing R. Fernandes, L. Borrego, J.S. Jesus, J.A.M. Ferreira, J.D.M. Costa		#041 	Finite element analysis of unnotched and notched functionally graded steel specimens Ela Marković, Robert Basan, Jelena Srnc Novak, Andrej Žerovnik	
#116 	Microstructure and hardness properties of a s690ql Steel welded joint Paulo Mendes, Mário Monteiro, Rui Pedro Silva, José A.F.O Correia, Abílio de Jesus, Manuel Vieira, Tiago Pereira, Ana Reis		#188 	The concept of the stress dead zones formulating the line spring model as an approach to the behaviour of a part through crack in an elastic plate Francisco Q. Melo, Vasco Amorim, Hugo Mesquita, Francisco Afonso, Paulo J. Tavares, Pedro G. Moreira		#021 	Thermal analysis for testing underground battery location E.S. Gonçalves, J. Gonçalves, H. Rosse, J. Costa, L. Jorge, J.A. Gonçalves, J.P. Coelho, J.E. Ribeiro	
#132 	Application of the dual-adhesive technique for static improvement of single-step joints D.F.T. Carvalho, R.D.S.G. Campilho, L.D.C. Ramalho, R.D.F. Moreira, K. Madani		#007 	Investigation of the fracture mechanical behavior of amorphous polymers considering crack tip heating Johannes Kaiser, Christian Bonten		#164 	Aerodynamic optimization of UAV Wojciech Skarka, Bartosz Rodak	
#013 	Experimental and numerical analysis of FSW process control effects on morphology and strength of dissimilar aluminum to polymer joints Arménio N. Correia, Ricardo Baptista, Daniel F.O. Braga, Virginia Infante		#039 	Fracture toughness of polyurethane materials: experimental and numerical investigation on the size effect Daniela Scorza, Andrea Carpinteri, Liviu Marsavina, Camilla Ronchei, Sabrina Vantadori, Andrea Zanichelli		#020 	Static analysis of a lamp post according to Eurocode EN-40 E.S. Gonçalves, J. Gonçalves, H. Rosse, J. Costa, L. Jorge, J.A. Gonçalves, J.P. Coelho, J.E. Ribeiro	
#136 	Influence of the rivet-die offset on the integrity of self-piercing-riveted joints J. Domitner, Z. Silvayeh, J. Stippich, P. Auer, N. Gubeljak, J. Predan		#004 	Bending fatigue of high-strength seven-wire monostrand Gang Shen, Harry Coules		#156 	Delamination of multilayered viscoelastic inhomogeneous beams under moving loading Victor Rizov	
#180 	Optimization of 3D Printing Parameters for PEI Using Design of Experiments Rodrigo Praça, Tiago Domingues, Gonçalo Cipriano, Pedro Sousa, Pedro Moreira		#197 	Fatigue testing of fibre inforced composite material on 1000 Hz testing frequency Markus Berchtold		#157 	Longitudinal fracture of functionally graded beams with non-linear rheological behaviour Victor Rizov	
#199 	Effect of post-production heat treatment on SLM-produced AlSi10Mg components tested at high strain rates G.P. Cipriano, G. Monteiro, D.F.O. Braga, H. Lopes, J. Jesus, L.P. Borrego, P.M.G. Moreira		#126 	J-R curve evaluation using CMOD measured by Digital Image Correlation Aleksandar Sedmak, Blagoj Petrovski, Nenad Milosevic		#205 	Design of Experiments Approach to Direct Energy Deposition Manufacturing of Hot Forming Tools: A Case Study Daniel F.O. Braga, Lucas Azevedo, G. Cipriano, Pedro M.G.P. Moreira	

Thursday, 17:30 – 18:00	CLOSING SESSION	Room Sunset
Conference Organizing Committee		

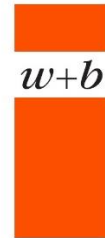
Friday, 1 September 2023

Friday, 09:00

Conference Tour

departure at the hotel

"Madeira Sight Seeing, Tour to Porto Moniz"



walter+bai

Prüfmaschinen
Testing Machines



MRA
GRUPO ÁLAVA

madeira islands



ASSOCIAÇÃO DE PROMOÇÃO DA
MADEIRA
PROMOTION BUREAU

