

# 23<sup>rd</sup> European Conference on Fracture

Funchal, Madeira, Portugal

27 June - 1 July, 2022

<https://www.ecf23.eu>

ECF23 Programme



# Program Overview

	Monday 27/06						Tuesday 28/06						Wednesday 29/06						Thursday 30/06						Friday 01/07					
7:45 8:45	REGISTRATION						REGISTRATION						REGISTRATION						REGISTRATION						REGISTRATION					
8:45 9:20	OPENING SESSION						PLENARY LECTURE III						PLENARY LECTURE VI						PLENARY LECTURE IX						PLENARY LECTURE XII					
9:20 9:55	PLENARY LECTURE I						PLENARY LECTURE IV						PLENARY LECTURE VII						PLENARY LECTURE X						PLENARY LECTURE XIII					
9:55 10:30	PLENARY LECTURE II						PLENARY LECTURE V						PLENARY LECTURE VIII						PLENARY LECTURE XI						PLENARY LECTURE XIV					
10:30 11:00	COFFEE-BREAK						COFFEE-BREAK						COFFEE-BREAK						COFFEE-BREAK						COFFEE-BREAK					
11:00 12:45	1 A	1 B	1 C	1 D	1 E	1 F	4 A	4 B	4 C	4 D	4 E	4 F	7 A	7 B	7 C	7 D	7 E	7 F	9 A	9 B	9 C	9 D	9 E	9 F	12 A	12 B	12 C	12 D	12 E	12 F
12:45 14:00	LUNCH						LUNCH						LUNCH						LUNCH						CLOSING SESSION and LUNCH					
14:00 15:45	2 A	2 B	2 C	2 D	2 E	2 F	5A Council	5 B	5 C	5 D	5 E	5 F	8 A	8 B	8 C	8 D	8 E	8 F	10 A	10 B	10 C	10 D	10 E	10 F	<p style="text-align: center;"><b>CONFERENCE TOUR</b> <i>Optional</i></p> <p style="text-align: center;"><i>Registration and payment must be done individually</i></p>					
15:45 16:15	COFFEE-BREAK						COFFEE-BREAK						COFFEE-BREAK						COFFEE-BREAK											
16:15 18:00	3 A	3 B	3 C	3 D	3 E	3F ExCo	6A Council	6 B	6 C	6 D	6 E	6 F	Young scientist competition	Poster Session	TC10B Round tables	FFEMS meet	TC14 meet	11 A	11 B	11 C	11 D	11 E	11 F							
18:00																			FIS meet (room Funchal)											
18:30 19:30	WELCOME COCKTAIL						FRATTURA ED INTEGRITÀ STRUTTURALE COCKTAIL						MADEIRA SUNSET (19h00)																	
20:00 23:00																			CONFERENCE BANQUET											

Sessions A	Sessions B	Sessions C	Sessions D	Sessions E	Sessions F
Room Funchal CF "Conference Floor"	Room Lisboa CF "Conference Floor"	Room Sydney 2nd Floor	Room Berlin 1st Floor	Room Rio de Janeiro 4th Floor	Room Paris 1st Floor



# Technical Program

June 29th, 2022 version

## Monday, 27th June 2022

MON, 08:45 - 09:20	OPENING SESSION	Room Funchal
<p>Welcome to Participants <b>(Conference Co-Chairs)</b> Welcome Address <b>Representative of University of Madeira</b> <b>President of ESIS</b></p>		

MON, 09:20 - 09:55	PLENARY LECTURE I	Room Funchal
<p><b>Prediction of fracture of polymer composite materials across different length scales</b> <b>Pedro Camanho</b> University of Porto, Portugal Chair: Pedro Moreira (INEGI, Portugal)</p>		

MON, 09:55 - 10:30	PLENARY LECTURE II	Room Funchal
<p><b>Fatigue and Fracture of Additively Manufactured Metallic Materials and Components</b> <b>Ali Fatemi</b> The University of Memphis, Memphis, TN, USA Chair: Luis Reis (IST, Portugal)</p>		

<b>Monday, 10:30 - 11:00</b>	<b>COFFEE-BREAK</b>	<b>Lounge</b>
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Mon	Session 1A 11:00-12:45	Room Funchal	Mon	Session 1B 11:00-12:45	Room Lisboa	Mon	Session 1C 11:00-12:45	Room Sydney
TOPIC: TC03 Fatigue of Engineering Materials and Structures Chair: Sabrina Vantadori, Andrea Zanichelli			TOPIC: TC10B Hydrogen Embrittlement Chair: Milos B. Djukic, Hryhoriy Nykyforchyn, Jesús Toribio, Motomichi Koyama, Andrej Atrens			TOPIC: TC14 Integrity of Biomedical and Biological Materials Chair: Vadim Silberschmidt		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
038 	Experimental and analytical investigation of Low Cycle Fatigue Damage at notches in a polycrystalline Nickel base superalloy Adam Bu, Bernard Fedelich, Birgit Rehmer, Lucas Mäde, Markus Vöse		014 	Phase field modelling of hydrogen assisted fracture Emilio Martínez-Pañeda, Philip K. Kristensen, Christian F. Niordson, <i>Invited talk</i>		144 	Investigation of the Influence of Osteoporosis and Aging on Periprosthetic Femoral Fractures using Finite Element Analyses N.S. Henicke, M. Sander	
055 	Fracture toughness of the shot-earth 772 Sabrina Vantadori, Camilla Ronchei, Daniela Scorza, Andrea Zanichelli, Andrea Carpinteri		131 	Local approach to fracture of titanium alloys: new insights into the mechanisms of hydrogen embrittlement A. Poloni, A. Oudriss, J. Creus, J. Bouhattate, E. Conforto, S. Frappart, T. Millot, A. Mathis, X. Feaugas, <i>Invited talk</i>		337 	Structural Integrity of Skin: Effect of Thickness Rebecca Hooker, Anish Roy, Vadim V. Silberschmidt, Raman Maiti	
046 	Numerical simulation of fracture behaviour of the shot-earth 772 Andrea Zanichelli, Sabrina Vantadori, Camilla Ronchei, Daniela Scorza		019 	Hydrogen embrittlement of a 2205 duplex stainless steel under in-situ hydrogen charging Victor Arniella, Javier Belzunce, Cristina Rodríguez		265 	Statistical Evaluation of Fatigue Properties of L-PBF Manufactured Cellular Lattice Material Using a Strain Energy Density Approach Sunil Raghavendra, Michele Dallago, Valerio Luchin, Filippo Zanini, Simone Carmignato, Filippo Berto, Matteo Benedetti	
111 	The Beneficial Effect of Autofrettage on the Combined 3-D Stress Intensity Factors for Inner Radial Crack Arrays in a Spherical Pressure Vessel M. Perl, and M. Steiner		001 	Understanding the effects of hydrogen on the transition reference temperature of a reactor pressure vessel steel using sub-sized pre-cracked Charpy specimens Siddharth Suman, P. Spätig, H.P. Seifert		271 	Prediction of Failure Envelope of Calcified Aneurysmatic Tissue Jaynandan Kumar, Anshul Faye	
133 	Fracture Toughness of a 9Cr ODS steel determined on tube specimens B. Rais, J. Garnier, E. Pons, B. Marini, J. Besson		229 	Electrochemical detection of hydrogen desorption during deformation in austenitic stainless steels Saya Ajito, Tomohiko Hojo, Motomichi Koyama, Eiji Akiyama		316 	Mechanical performance of 3D printed prosthetic sockets: An experimental and numerical study Theodoros Marinopoulos, Simin Li, Vadim V. Silberschmidt	
067 	Evaluation of the effectiveness of Q and unified constraint parameters on the uniaxial and biaxial bending specimen Zeng Chen, Konstantinos Kouzoumis, Rob Kulka, Isabel Hadley, Mahmoud Mostafavi		134 	Hydrogen embrittlement of a martensitic carbon steel at high hydrogen pressure Bernd Loder, Gregor Mori		203 	In vitro study of the deployment performance of 3D printed stents in the diseased artery with the lipid arterial plaques M. Abdulsalam, J. Feng, R. Garrard, MM. Attallah, F Serracino-Inglo L. Zhao	
			334 	Correlating electrochemical and gaseous hydrogen charging of a X65 pipeline steel by the permeation technique E. Koren, Catalina M. H. Hagen, D. Wang, R. Johnsen				

Monday, 12:45 - 14:00	LUNCH	Restaurant
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Mon	Session 1D 11:00-12:45	Room Berlin	Mon	Session 1E 11:00-12:45	Room Rio de Janeiro	Mon	Session 1F 11:00-12:45	Room Paris
TOPIC: TC15 Structural Integrity of Additive Manufactured Components Chair: Filippo Berto			TOPIC: TC08 Numerical methods Chair: Gergely Molnar			TOPIC: Cyclic loading / Metallic materials Computational Experimental Chair: Liviu Marsavina		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
022 	PBF-LB/M/316L vs. hot-rolled 316L - comparison of cyclic plastic material behavior Johannes Diller, Dorina Siebert, Christina Radlbeck, Martin Mensinger		016 	Correlation found between the tensile strength and the length scale parameter in phase-field fracture based on the coupled criterion Gergely Molnár, Aurélien Doitrand, Rafaël Estevez, Anthony Gravouil		492 	Effect of mean stress and stress amplitude on the cyclic deformation mechanism and microstructure evolution of Al alloy used for subsea cables using small-scale in-situ testing Audun Johanson, Di Wan, Anette Brocks Hagen, Luigi Mario Viespoli, Filippo Berto, Antonio Alvaro	
070 	Effect of the manufacturing process on the bending characteristics of hybrid structures in Titanium-Lattice/FRP Costanzo Bellini, Rosario Borrelli, Francesco Di Caprio, Vittorio Di Cocco, Stefania Franchitti, Francesco Iacoviello, Larisa Patricia Mocanu, Luca Sorrentino		031 	Application of Uncoupled Damage Models to Predict Ductile Fracture in Metallic Sheet Blanking Jean-Philippe Ponthot, Romain Boman, Luc Papeleux and Cristian Canales		027 	Use of elastomers as pressure media for fatigue testing of cold forging tools Martin Killmann, Marion Merklein	
072 	Cyclic response and low-cycle fatigue strength of a Laser Powder Bed Fusion (L-PBF) additive manufactured AISI 316L steel D. Benasciutti, M. Pelegatti, F. De Bona, A. Lanzutti, E. Salvati, M. Sortino, J. Srnec Novak, F. Sordetti, G. Totis, E. Vaglio		115 	ProCrackPlast: A software for 3D fatigue crack growth simulations under large scale yielding conditions Rahul Ganesh, Meinhard Kuna, Stephan Gesell, Bernard Fedelich, Björn Kiefer		075 	Heat treatment effect on stress-life curve of additively manufactured MS1 maraging steel under push-pull loading Andrzej Kurek, Aleksander Karolczuk, Michał Böhm, Szymon Derda	
106 	Efficient Thermomechanical Modelling and Simulation of Laser Powder Bed Fusion process for the Prediction of Residual Stresses of Parts Harry O. Psihoyos, George N. Lampeas		159 	Numerical modelling of cleavage in high strength steels with parametric study on microstructures Quanxin Jiang, V.M. Bertolo, V.A. Popovich, J. Sietsma, Carey L. Walters		236 	Fatigue Crack Extension Mode Analysis in 18%Ni Steel Pengxu REN, Shigeru HAMADA	
169 	A Machine Learning Approach to Finite Fatigue Life Prediction in Additively Manufactured Metals Enrico Salvati, Alessandro Tognan, Luca Laurenti		170 	A probabilistic FEM approach for the design of glass components Gregorio Mariggì, Giulio Ventura, Mauro Corrado		480 	Wire to wire contact in fatigue of power cables copper conductors Luigi Mario Viespoli, Audun Johanson, Di Wan, Sigurd Schawlann, Anette Brocks Hagen, Filippo Berto, Antonio Alvaro	
489 	Vibration fatigue of additive manufactured PLA components Martin Česnik, Janko Slavič, Miha Boltežar		189 	Numerical evaluation of damaged torque link fatigue life A. Grbović, G. Kastratović, A. Sedmak, N. Vidanović		616 	Patented Resonant Fatigue Testing Machine to perform HCF (High Cycle Fatigue) and VHCF (Very High Cycle Fatigue) Tests at 1000 Hz on test samples and small components Markus Berchtold	
579 	Understanding the effect of surface and sub-surface parameters including roughness and porosity on fatigue life of laser powder bed fusion (L-PBF) aluminium (AlSi10Mg) alloy Laboni. Afroz, Ma Qian, Mark Easton and Raj Das		260 	Towards a simplified, iteration-free calibration strategy for a non-local GURSON-TVERGAARD-NEEDLEMAN-type damage model A. Seupel, R.D. Pham, O. El Khatib, G. Hütter, B. Kiefer		237 	Couple analysis of DIC and FEM to quantify strain fields and crack-flank displacements in structural materials under cyclic mixed-mode I/II fracture Shlyannikov V., Fedotova D., Khamidullin R.	

Monday, 12:45 - 14:00

LUNCH

Restaurant

Mon	Session 2A 14:00-15:45	Room Funchal	Mon	Session 2B 14:00-15:45	Room Lisboa	Mon	Session 2C 14:00-15:45	Room Sydney
TOPIC: TC03 Fatigue of Engineering Materials and Structures Chair: Sabrina Vantadori, Andrea Zanichelli			TOPIC: TC10B Hydrogen Embrittlement Chair: Milos B. Djukic, Xavier Feaugas, Emilio Martínez-Pañeda, Yann Charles			TOPIC: Metallic materials / Experimental Computational Chair: Daniel Braga		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
140 	Effect of a single overload on the cyclic R-curve behaviour of a $\gamma$ -titanium aluminide Arthur Lintner, Reinhard Pippan, Martin Schloffer, Anton Hohenwarter		151 	Hydrogen effects on micro-damage arrest in an FCC-HCP transformation-induced plasticity steel Motomichi Koyama, Chunxi Hao, Saya Ajito, Eiji Akiyama, <i>Invited talk</i>		239 	Probabilistic Safety Assessment of Cast Iron Containers Johannes Tlatlik, Igor Varfolomeev, Benedikt Rohrmüller, Jörg Hohe	
431 	Thermal fracture resistance of functionally graded thermal barrier coatings with systems of multiple cracks Vera Petrova, Siegfried Schmauder		049 	Strain-life testing as a probe of hydrogen effects on deformation in steel microstructures M.L. Martin, M. Connolly, P.E. Bradley, D.S. Lauria, R. Amaro, A.J. Slifka, <i>Invited talk</i>		258 	Experimental and Numerical Analysis of Crack Tip Flipping During Dynamic Fracture Propagation in High-Grade Pipeline Steel Benoît Paermentier, Sam Coppieters, Reza Talemi	
153 	Structural Integrity Assessment of Plates Containing Semi-elliptical Surface Cracks: Finite Element Fracture Analyses Shiwen Wang, Paul A Shard, Antony M Hurst, Yuebao Lei		266 	Hydrogen Embrittlement Property of Nitrogen Added TRIP-aided Martensitic Steels Tomohiko Hojo, Kiattada Chanvichitkul, Hiroyuki Waki, Fumihito Nishimura, Akihiko Nagasaka, Saya Ajito, Motomichi Koyama, Eiji Akiyama		428 	Fracture arrest test for identifying fracture stress in steel Fumitaka Yasui, Kazuki Shibamura	
158 	Fatigue damage analysis on 42CrMo4+QT via critical volume approach Matěj Mžourek, Jan Papuga, Martin Nesládek, Martin Matušů, Jiří Čapek, Vladimír Mára		284 	Hydrogen embrittlement behaviors in TRIP-aided bainitic ferrite steel with different deformation temperatures Yutao Zhou, Tomohiko Hojo, Motomichi Koyama, Saya Ajito, Eiji Akiyama		444 	Evaluation of the T0 Reference Temperature for an Ultra High Strength Martensitic Steel Claudio Ruggieri, Vitor S. Barbosa	
168 	A numerical method for obtaining plasticity-induced crack closure Giovanna Calvín, Mikel Escalero, Miguel Muñiz-Calvente, Haritz Zabala		160 	Hydrogen trapping and embrittlement revealed in martensitic Fe-xAl-yC steels M. Pinson, H. Springer, T. Depover, K. Verbeken		462 	Fabrication and characterization of 316L stainless steel components printed with material extrusion additive manufacturing Saveria Spiller, Sondre Ølsoybak Kolstad, Seyed Mohammad Javad Razavi	
173 	Microstructural Investigation of Ti-6Al-4V after High Pressure Torsion Fatigue (HPTF) Experiments by Scanning Electron Microscopy (EBSD) Ahmet Karkar		304 	The effect of prior austenite grain morphology on hydrogen embrittlement behaviour in as-quenched 500 HBW steels Renata Latypova, Tun Tun Nyo, Oskari Seppälä, Eric Fangnon, Yuriy Yagodzinsky, Saara Mehtonen, Hannu Hänninen, Jukka Kömi, Sakari Pallaspuo		464 	Grain refinement effect on mechanical behavior of in situ (TiB+La2O3)/Ti-6Al-4V manufactured by laser melting deposition Yuyu Liu, Zheng Chen, Jianying He, Zhiliang Zhang	
504 	The influence of anisotropy on vibration behavior of S600Mc sheet metal Iulian-Ionut Ailinei, Sergiu-Valentin Galațanu, Liviu Marșavina		062 	Microstructures and HE fracture mechanisms in 17-4PH martensitic stainless steel Guocai Chai, Tomas Antonsson, Sten Wessman, Lena Ryde		503 	Evaluating the size effects on fatigue life of 42CrMo4+QT steel using a statistical S-N model with highly-stressed volume and surface Julian M. E. Marques, Matěj Mžourek, Jan Papuga, Milan Růžička, Denis Benasciutti, Vladimír Mára, Karel Trojan	

Monday, 15:45 - 16:15	COFFEE-BREAK	Lounge
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Mon	Session 2D 14:00-15:45	Room Berlin	Mon	Session 2E 14:00-15:45	Room Rio de Janeiro	Mon	Session 2F 14:00-15:45	Room Paris
TOPIC: TC15 Structural Integrity of Additive Manufactured Components Chair: Fillippo Berto & Javad Razavi			TOPIC: TC08 Numerical methods Chair: Jean-Philippe Ponthot			TOPIC: Impact, high rate, damage Chair: Raj Das		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
214 	Fatigue limit estimation of Ti6Al4V specimens produced by selective laser melting in as-built surface condition by using fracture mechanics approaches Daniele Rigon, Filippo Coppola, Giovanni Meneghetti		279 	The effect of material orientation on void growth N. Hosseini, J.C. Nieto-Fuentes, M. Dakshinamurthy, J.A. Rodriguez-Martinez, G. Vadillo		037 	Master Curve Evaluation at Elevated Loading Rates Uwe Mayer	
256 	Strength and Fracture Resistance in Laser Powder Bed-processed AISi10Mg and 18Ni-300 Maraging Steel Bernd Gludovatz, Moses J. Paul, Jamie J Kruzic, U. Ramamurty		305 	Prospects of Configurational Forces in 3D Finite Element Crack Growth Analyses Kevin Schmitz, Andreas Ricoeur		569 	An Industrial Approach to High Strain Rate Testing Emilia Chiamaka Ikenna-Uzodike, Yin Jin Janin, Marius Gintalas, Wei Wen, Pedro E.J. Rivera-Diaz-del-Castillo	
283 	Wear and corrosion behavior of 18Ni-300 maraging steel produced by laser-based powder bed fusion and conventional route Pietro Tonolini, Luca Marchini, Lorenzo Montesano, Marcello Gelfi, Annalisa Pola		341 	Extended back-face strain compliance solution for physically short crack regime in SENB-4P specimen Hasan Saeed, Somsubhro Chaudhuri, Wim De Waele		422 	Structural Integrity Assessment of a Spent Nuclear Fuel Transportation Cask under Aircraft Engine Crash Chang-Jong Kim, Jong-Sung Kim	
289 	High temperature mechanical properties of AlMgScZr alloy produced by Laser Powder Bed Fusion Maria Beatrice Abrami, Marialaura Tocci, Marcello Gelfi, Annalisa Pola		430 	Numerical analysis of damage and fracture in steel sheets undergoing non-proportional loading paths Michael Brünig, Moritz Zistl, Steffen Gerke		437 	Passive Safety Solutions on Coach according ECE R29: Experimental and Numerical analyses Rogério Lopes, Nuno V. Ramos, M. P. L. Parente, P.M.G.P. Moreira, Rafael Cunha, Ricardo Maia, Rui Rodrigues	
291 	Side-groove effect on fracture mechanical fatigue testing of PLA material Aleksa Milovanović, Jan Poduška, Lukaš Trávníček, Luboš Nákhlik, Aleksandar Sedmak, Miloš Milošević, Fillippo Berto		470 	2D finite elements for the computational analysis of crack propagation in brittle materials and the handling of double discontinuities Sebastiano Fichera, Bruno Biondi, Giulio Ventura		045 	One-step dynamic calibration of strain measurement in a split Hopkinson pressure bar Sebastian Henschel, Lutz Krüger	
292 	Notch Orientation and Fatigue Strength of As-built L-PBF AISi10Mg Radomila Konečná, Gianni Nicoletto, Ludvík Kunz		484 	Development of a phase field model for elastoplasticity using concepts of damage mechanics Aris Tsakmakis, Michael Vormwald		179 	Complex stress state analysis for aluminum alloy accounting for damage accumulation Kosov D., Fedorenkov D., Tumanov A.	
325 	Mechanical behaviour of specimens made via fused deposition modelling under three-point bending Mario Álvarez-Blanco, Adrián Arias-Blanco, Miguel Marco, Diego Infante-García, Eugenio Giner, M. Henar Miguélez		550 	Ranges of Influence of the Stress Invariants and Hardening: Monotonic and Cyclic Applications L.M Araujo, L. Malcher,		252 	Precise dynamic disintegration of concrete structures by controlling wave motion Koji Uenishi, Hiroshi Yamachi, Junichiro Nakamori	

<b>Monday, 15:45 - 16:15</b>	<b>COFFEE-BREAK</b>	<b>Lounge</b>
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Mon	Session 3A 16:15-18:00	Room Funchal	Mon	Session 3B 16:15-18:00	Room Lisboa	Mon	Session 3C 16:15-18:00	Room Sydney
TOPIC: TC03 Fatigue of Engineering Materials and Structures Chair: Sabrina Vantadori, Andrea Zanichelli			TOPIC: TC10B Hydrogen Embrittlement Chair: Antonio Alvaro, Motomichi Koyama, May L. Martin, Yann Charles			TOPIC: TC14 Integrity of Biomedical and Biological Materials Chair: Vadim Silberschmidt		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
487 	Analysis of crack front loading and J-integral evaluation to improve reliability of toughness calculations based on miniaturized CT specimens B. Aydin Baykal, Philippe Spätig		381 	The synergy of hydrogen embrittlement mechanisms in steel and metals: HELP + HEDE model Milos B. Djukic, Gordana M. Bakic, Vera Sijacki Zeravcic, Aleksandar Sedmak, Bratislav Rajcic, Muhammad Wasim, Jovana Perisic, <i>Invited talk</i>		432 	Effect of microstructure on trabecular-bone fracture: numerical analysis Aleksandr Shalimov, Mikhail A. Tashkinov, Ekaterina Smotrova, Simin Li, Vadim V. Silberschmidt	
224 	Improvement of fracture toughness based on auxetic patterns fabricated by metallic extrusion in 3D printing Marouene Zouaoui, Omar Saifouni, Julien Gardan, Ali Makke, Naman Recho, Julien Kauffmann		496 	A modelling framework unifying hydrogen enhanced plasticity and decohesion Meichao Lin, Haiyang Yu, Andrés Díaz, Yu Ding, Vigdis Olden, Antonio Alvaro, Jianying He, Zhiliang Zhang, <i>Invited talk</i>		584 	The role of microstructural features on the strengthening effect of biomedical ultrafine-grained titanium by low temperature annealing Kamil Majchrowicz, Agata Sotniczuk, Bogusława Adamczyk-Cieślak, Paweł Józwiak, Halina Garbacz	
235 	An Investigation of T-Stress Effect on Fatigue Crack Deviation in Thick Rolled Plates of 2050-T84 Aluminum Alloy Abderrahman Guelzim, Alain Köster, Vincent Maurel, Vincent Chiaruttini, Érembert Nizery		346 	Effect of hydrogen charging on Charpy impact toughness of two pipeline steels Margo Cauwels, Robin Depraetere, Wim De Waele, Stijn Hertelé, Tom Depover, Kim Verbeken		526 	Experimental investigation of adhesion strength of dental ceramic to Ti6Al4V alloy fabricated by milling and selective laser melting Tsanka Dikova, Angel Ahchev, Vladimir Dunchev, Dzhendo Dzhendov, Yavor Gagov	
301 	Numerical and experimental investigation of plasticity induced crack closure in case of multiaxial fatigue crack growth with constant and component-near loading cases F.Conrad, J.Filipovic, C. Kontermann, M. Oechsner, A. Blug, A. Bertz, D. Carl		328 	Hydrogen Embrittlement Assessment of Pipeline Materials Through in situ Slow Strain Rate Tensile Testing Aleksander Omholt Myhre, Anette Brocks Hagen, Alexei Vinogradov, Bård Nyhus, Vigdis Olden, Antonio Alvaro		379 	Mechanical behavior and fracture of closed-cell structures with shape variation: Numerical analysis Yulia Pirogova, Mikhail A. Tashkinov, Vadim V. Silberschmidt	
344 	New view on crack closure determination from compliance data Pavel Pokorný, Tomáš Vojtek, Luboš Náhlík, Pavel Hutař		494 	Hydrogen-induced transgranular to intergranular fracture transition in bi-crystalline nickel Yu Ding, Haiyang Yu, Meichao Lin, Jianying He, Zhiliang Zhang		380 	Mechanical behavior of two-phase auxetic structures: effect of properties contrast Anastasiia Tarasova, Mikhail A. Tashkinov and Vadim V. Silberschmidt	
363 	Fracture of austenitic stainless steels at cryogenic temperatures Pilar Fernández-Pisón, José A. Rodríguez-Martínez, Elisa García-Tabarés Valdivieso, Ignacio Avilés-Santillana and Stefano Sgobba		054 	Delayed fracture susceptibility of a 1.5 GPa class dual phase steel evaluated by U-bend test Rama Srinivas Varanasi, Motomichi Koyama, Yuki Shibayama, Shuya Chiba, Saya Ajito, Tomohiko Hojo, Eiji Akiyama				
453 	Improving Cruciform Test Specimens Frequency Response for VHCF Ultrasonic Biaxial Fatigue Testing Diogo Montalvão, Kadir Hekim, James Howard, Pedro Costa, Luis Reis, Manuel Freitas		232 	Hydrogen diffusion behavior in a stretch-formed high strength steel sheet Hayato Nishimura, Saya Ajito, Tomohiko Hojo, Motomichi Koyama, Ken-ich Fujita, Yuki Shibayama, Hiroshi Kakinuma, Eiji Akiyama				

Mon	Session 3D 16:15-18:00	Room Berlin	Mon	Session 3E 16:15-18:00	Room Rio de Janeiro	Mon	Session 3F 16:15-18:00	Room Paris
TOPIC: TC15 Structural Integrity of Additive Manufactured Components Chair: Vittorio Di Cocco			TOPIC: TC08 Numerical methods Chair: Michael Brünig			ExCo meeting		
Ref:	Title and Author (s)		Ref:	Title and Author (s)				
302 	Numerical Investigation on Impact of Internal Stress Relief Groove on Fatigue Lifetime of Additively Manufactured 316L Stainless Steel Niels Huylebroeck, Sanjay Gothivarekar, Reza Talemi		555 	Structural Optimization of a Passenger Train Seat using Finite Element Analysis F. Alves, J. Marques, J.A. Madeira, R. Baptista, V. Infante				
391 	Effect of heat treatment on fatigue crack growth performance of AlSi10Mg aluminium alloy submitted to LPBF L.P. Borrego, R. Fernandes, J.S. Jesus, J.A.M. Ferreira, J.D. Costa		013 	The effect of cooling transients on tearing resistance of a rolled steel S. Lindqvist, T. Seppänen, L. Sirkiä				
392 	Effect of the direction of printing on the fracture of additively manufactured Duplex stainless steel David Roucou, Thomas Corre, Gilles Rolland, Véronique Lazarus		132 	Numerical model of corrosion influence on mechanical behavior of steel AH36 Darko Pastorcic, Goran Vukelic, Zeljko Bozic				
411 	The Theory of Critical Distances to perform the static assessment of 3D-printed concrete weakened by manufacturing defects and cracks N. Alanazi, J.T. Kolawole, R. Buswell, L. Susmel		136 	Simulation of slant and cup-cone fracture using a nonlocal GTN model integrating two internal lengths A. El Ouazani Tuhami, S. Feld-Payet, S. Quilici, N. Osipov, J. Besson				
474 	Additively manufactured tensile ring-shaped specimens for pipeline material fracture examination - influence of geometry Isaak Trajković, Miloš Milošević, Marko Rakin, Nebojsa Bogojevic, Snezana Ciric-Kostic, Filippo Berto, Bojan Medjo		200 	Robust and cost-efficient continuous-discontinuous description of failure: application to the simulation of complex crack paths A. El Ouazani Tuhami, S. Feld-Payet, S. Quilici, N. Osipov, J. Besson				
475 	Tailored distribution of defects in thin sheets to control their wrinkling Andrea Spagnoli, Riccardo Alberini, Filippo Berto, Chiara Bertolin, Roberto Brighenti, Matteo Montanari		485 	Modeling of AL-6061 aluminum alloy deformation diagrams by machine learning methods Iryna Didych, Oleh Yasniy, Iaroslav Pasternak, Lukash Sobashek				
615 	Application of crack growth similitude laws for evaluation of fatigue crack propagation in additively manufactured metal alloys Laboni Afroz, Ma Qian, Mark Easton and Raj Das		486 	Comparative analysis of the influence of higher order terms in Williams' series expansion for different cracked specimens: theoretical approach, photoelastic experiments and finite element analysis Stepanova L.V., Zhabbarov R.M.				

<b>Monday, 18:30 - 19:30</b>	<b>WELCOME RECEPTION</b>	
COCKTAIL RECEPTION Casino Park Hotel, Conference Venue Funchal		

Tuesday, 28<sup>th</sup> June 2022

TUE, 08:45 - 09:20	PLENARY LECTURE III	Room Funchal
<b>Probing nanoscale mechanical properties of additively manufactured metallic alloys</b> <b>Jianying He</b> Faculty of Engineering, Norwegian University of Science and Technology (NTNU), Norway Chair: Aleksandar Sedmak (University of Belgrade, Serbia)		
		

TUE, 09:20 - 09:55	PLENARY LECTURE IV	Room Funchal
<b>Fracture in Structural Adhesives Joints- Achievements and Challenges</b> <b>Bamber Blackman</b> Imperial College London, UK Chair: Andreas J. Brunner (Swiss Federal Laboratories for Materials Science and Technology, Switzerland)		
		

TUE, 09:55 - 10:30	PLENARY LECTURE V	Room Funchal
<b>Mechanical behaviour of biomedical materials</b> <b>Vadim Silberschmidt</b> Loughborough University, UK Chair: Zhiliang Zhang (NTNU, Norway)		
		

<b>Tuesday, 10:30 - 11:00</b>	<b>COFFEE-BREAK</b>	<b>Lounge</b>
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Tue	Session 4A 11:00-12:45	Room Funchal	Tue	Session 4B 11:00-12:45	Room Lisboa	Tue	Session 4C 11:00-12:45	Room Sydney
TOPIC: TC03 Fatigue of Engineering Materials and Structures Chair: Sabrina Vantadori, Andrea Zanichelli			TOPIC: TC10B Hydrogen Embrittlement Chair: Motomichi Koyama, Tom Depover, Antonio Alvaro, Milos B. Djukic			TOPIC: TC02 Micromechanisms Chair: Andrey Jivkov		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
399 	Measurement of Elastic Stresses and Dissipated Energies at Cracks – Is the Lock-In-Evaluation an Appropriate Tool? Jürgen Bär, Ralf Urbaneck		275 	The interaction of hydrogen with retained austenite in quenching and partitioning (Q&P) and transformation induced plasticity (TRIP) steels Simon Vander Venet, Silvia Leitner, Vsevolod Razumivskiy, Werner Ecker, Tom Depover, Kim Verbeken, <i>Invited talk</i>		015 	The role of plastic strain gradients on metallic fracture Emilio Martínez-Pañeda, Norman A. Fleck	
400 	Experimental determination of a Kitagawa-Takahashi diagram of the aluminum alloy AA2024 using potential drop measurements Jürgen Bär		429 	Combined High Energy X-Ray Diffraction and Small-Angle Scattering Measurements of Strain, Dislocation Density and Porosity Near Steel Fatigue Cracks Grown in Hydrogen M.J. Connolly, M.L. Martin, R. Amaro, P.E. Bradley, D. Lauria, J.S. Park, A.J. Slifka, <i>Invited talk</i>		024 	Inclusion of Plastic Strain Effects on Cleavage Fracture Toughness Predictions from Subsize Pre-cracked Charpy Specimens Claudio Ruggieri	
425 	Interface cracks under dynamic loading: cracks' closure and friction Marina Menshykova, Oleksandr Menshykov, Igor A Guz		174 	Role of softening in reduced ductility of hydrogen-affected pipeline steel A. Asgari, M. Adly, T. Boot, V. Popovich, C.L. Walters		035 	High-temperature fatigue crack growth from intrinsic material defects in a WC-Co hard metal at 700°C in vacuum T. Klünsner, T. Lube, P. Pichler, M. Krobath, K. Maier, L. Walch, W. Ecker, S. Marsoner, C. Czettel, R. Pippan	
507 	Fatigue life of cable sheathing manufactured by longitudinally welding and forming Audun Johanson, Luigi Mario Viespoli, Filippo Berto, Antonio Alvaro		407 	Effect of selected processing routes on microstructure and hydrogen embrittlement behavior of aluminum alloys Masoud Moshtaghi		042 	Physical measuring techniques for VHCF assessment of wheel steel for high speed trains Dietmar Eifler and Michael Koster	
466 	Evaluation of the Endurance Limit of Notch Intersections under inner-pressure Loading Carl Fällgren, Michael Vormwald, Heinz Thomas Beier		514 	On the Formation of Zirconium Hydride Platelets Per Stähle		044 	Temperature evolution as a fatigue parameter of 42CrMo4+QT Martin Matušů, Jan Papuga, Matěj Mžourek	
097 	Probabilistic Reliability Assessment of Laser Beam Welded Ti-6Al-4V Components in the Presence of Internal Defects Nikolai Kashaev and Fedor Fomin		505 	The interaction of hydrogen with microstructural defects studied by internal friction Liese Vandewalle, Milan J. Konstantinović, Tom Depover, Kim Verbeken		077 	3D analysis of HR-EBSD fields of indentation micro-cracks in (001) Silicon Abdalrhaman Koko, Phani S. Karamched, Angus J. Wilkinson, and T. James Marrow	
064 	Adapted multiaxial fatigue models based on the critical plane approach to consider the presence of small defects in steel Lucas Carneiro Araujo, Déborah de Oliveira, Marcos Venicius Soares Pereira, José Alexander Araújo		023 	Investigation of hydrogen embrittlement in a high manganese twinning induced plasticity steel - a multiscale approach Heena Khanchandani, Leigh T. Stephenson, Dierk Raabe, Stefan Zaefferer, Baptiste Gault		080 	A microstructure image-based numerical model for predicting the fracture toughness of alumina trihydrate (ATH) filled poly(methyl methacrylate) (PMMA) composites Ruoyu Zhang, Idris Mohammed, Ambrose Taylor and Maria Charalambides	

Tuesday, 12:45 - 14:00	LUNCH	Restaurant
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Tue	Session 4D 11:00-12:45	Room Berlin	Tue	Session 4E 11:00-12:45	Room Rio de Janeiro	Tue	Session 4F 11:00-12:45	Room Paris
TOPIC: TC15 Structural Integrity of Additive Manufactured Components Chair: Costanzo Bellini			TOPIC: TC08 Numerical methods Chair: Jacques Besson			TOPIC: SPA Advances in variational models for fracture Chair: Fabian Welschinger, Vladislav Mantic		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
493 	Experimental and Numerical Characterization of Ductile Fracture Properties of EN AW 5183 WAM Profile Sheikh Enamul Hoque, Mathias Silmbroth		587 	Extending reliability of FEM simulations, based on optically assisted tensile tests – a digital twin T. Fekete, D. Antók, L. Tatár, P. Berecki		191 	A global-local approach for phase field fracture modeling of shell structures: Application to static and fatigue loading conditions with efficient quasi-Newton solution Zeng Liu, Jose Reinoso, Marco Paggi	
495 	Crack path direction analysis in plane-strain fracture toughness assessment tests of quasi-brittle PLA polymer and ductile PLA-X composite Aleksa Milovanović, Miloš Milošević, Isaak Trajković, Aleksandar Sedmak, Mohammad Javad Razavi, Filippo Berto		110 	Influence of additional factors on the integrity of pipelines with small corrosion defects Chmelko, V., Šulko, M. Garan. M, O. Zvirko, Abilio M.P. De Jesus		192 	Experimental and Analytical Investigation of Tensile Behavior of P91 Steel Using Small Punch Testing Gauri Mahalle and Abdullah Al Mamun	
506 	Effect of recycling powder on the fatigue properties of AM Ti6Al4V P. Foti, L. P. Mocanu, S.M.J. Razavi, C. Bellini, R. Borrelli, V. Di Cocco, S. Francitti, F. Iacoviello, F. Berto		368 	Study on Fatigue damage in Additively Manufactured IN718 Alloy Vidit Gaur		220 	Analysis of unfolding failure in unidirectional and cross-ply CFRP curved laminates: Numerical and Experimental Study S. Bushpalli, E. Graciani, B. López-Romano	
530 	Influence of corrosion environment on the fatigue crack growth of 17-4 PH steel specimens made by SLM Bollino F. Sepe R., Razavi S.M.J., Berto F.		549 	Influence of flexoelectricity on an interface crack between two dissimilar dielectric materials Jan Sladek, Vladimir Sladek, Maryan Hrytsyna, Tomas Profant		259 	Phase-field modeling of brittle fracture in heterogeneous bars Francesco Vicentini, Pietro Carrara, Laura De Lorenzis	
558 	Strain rate sensitivity of AlSi10Mg components produced by SLM with and without post heat treatment G.P. Cipriano, V. Lemkow, J. Jesus, L.P. Borrego, D.F.O. Braga, P.M.G. Moreira		612 	Computational investigation of the Várzeas bridge steel under monotonic tensile by means of CPFEM modelling António Mourão, José A.F.O. Correia, Jingyu Sun, Guian Qian, Filippo Berto, Túlio Bittencourt, Rui Calçada		048 	Phase field fracture modelling for 3D printed materials: a preliminary study S. Sangaletti, I. G. Garcia	
599 	Effect of strain rate on additive manufacturing (SLM and LMD) steel tensile properties Daniel F.O. Braga, Lucas Azevedo, Miguel Onofre, Gonçalo P. Cipriano, Carlos Furtado, Pedro M.G.P. Moreira		552 	Full-field identification of mixed-mode adhesion properties in microelectronics from micrographs only J.P.M. Hoefnagels, A.P. Ruybalid, O. van der Sluis, M.G.D Geers				
601 	The effect of build direction and additive manufacturing process on the tensile properties of C300 and 316L steel Daniel F.O. Braga, Matěj Rott, Lucas Azevedo, Carlos Furtado, Pedro M.G.P. Moreira		577 	Modeling the behavior of CFRP-strengthened RC slabs under fire exposure Maha Assad, Rami A. Hawileh, Jamal A. Abdalla				

<b>Tuesday, 12:45 - 14:00</b>	<b>LUNCH</b>	<b>Restaurant</b>
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Tue	Session 5A 14:00-15:45	Room Funchal	Tue	Session 5B 14:00-15:45	Room Lisboa	Tue	Session 5C 14:00-15:45	Room Sydney
Council meeting			TOPIC: TC10B Hydrogen Embrittlement Chair: Milos B. Djukic, Motomichi Koyama, May L. Martin, Per Ståhle, Antonio Alvaro, Tom Depover			TOPIC: TC02 Micromechanisms Chair: Claudio Ruggieri		
			Ref:	Title and Author (s)		Ref:	Title and Author (s)	
			065 	Finite Element Modelling of Hydrogen transport in a multimaterial component under complex thermomechanical loadings S. Bian, J. Mougnot, Tom Wauters, Xavier Bonnin, Richard Pitts, Yann Charles, <i>Invited talk</i>		088 	Damage mechanisms in additively manufactured 316L stainless steel subjected to thermomechanical fatigue Tomáš Babinský, Ivo Šulák, Adam Weiser, Lukas Englert, Stefan Guth	
			406 	Hydrogen and hydrides impact on zirconium based alloys Liliana I. Duarte, F. Fagnoni, A. Colldeweih, O. Yetik, R. Zubler, P. Trtik, J. Bertsch, <i>Invited talk</i>		138 	Effect of chemical heterogeneities (segregations) on fracture toughness of low alloy ferritic steel used for large forged components in the nuclear industry A. Christal, A. Parrot, P. Todeschini, A-F. Gourgues, J. Besson	
			554 	Numerical simulation of pressurized disk tests for the study of hydrogen embrittlement D. Lopes Pinto, A. El Ouazani Tuhami, L. Meirelles Santana, L. Lacourt, N. Osipov, Y. Madi, J. Furtado, N. Gallienne, J. Besson		185 	A novel method for studying crack initiation mechanism in materials in very high cycle regime Guocai Chai, Jens Bergström, Christer Burman	
			311 	Fracture toughness of Zircaloy cladding in case of Delayed Hydride Cracking P. Francois, T. Petit, Q. Auzoux, D. Le Boulch, K. Ammar, J. Besson		257 	On the Limitations of Simultaneous Enhancements of Strength and Toughness in CrMnFeCoNi High-Entropy Alloys Bernd Gludovatz, Hyunseok Oh, Eun Soo Park, Robert O. Ritchie	
			580 	Hydrogen embrittlement resistance of Al-Al <sub>2</sub> O <sub>3</sub> coatings deposited by cold gas dynamic spray on pipeline steel M. Tebib, F. Delloro, M. Bertin, A. Meddour, A. Shibata, Y. Madi		262 	High-temperature interfacial damage in CGI: 3D numerical analysis Evangelia Nektaria Palkanoglou, Minghua Cao, Konstantinos P. Baxevanakis, Vadim V. Silberschmidt	
			330 	Effect of hydrogen on nanomechanical properties of Inconel 625 revealed by in situ electrochemical nanoindentation Chandrahasan. K. Soundararajan, Dong Wang, Alexey Vinogradov		309 	Impact of heat treatment on the impact toughness and brittle fracture initiation mechanism of a quenched and tempered nuclear Pressure Vessel Steel Jean-Baptiste Delattre, Bernard Marini, Anne-Francoise Gourgues-Lorenzon	
						319 	Micromechanism associated with very high cycle fatigue crack initiation of advanced DQ&P processed steel Sumit Ghosh, Bernd M. Schönbauer, Sakari Pallaspuuro, Mahesh Somani, Herwig Mayer, Jukka Kömi	

Tuesday, 15:45 - 16:15	COFFEE-BREAK	Lounge
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Tue	Session 5D 14:00-15:45	Room Berlin	Tue	Session 5E 14:00-15:45	Room Rio de Janeiro	Tue	Session 5F 14:00-15:45	Room Paris
TOPIC: TC15 Structural Integrity of Additive Manufactured Components Chair: Paolo Ferro			TOPIC: TC17 Non-Destructive Evaluation Chair: Paulo Tavares			TOPIC: SPA Advances in variational models for fracture Chair: Fabian Welschinger, Vladislav Mantic		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
117 	Qualification of uniform fatigue damage tolerance law for additively manufactured and cast Al-Si alloys Jochen Tenkamp, Sebastian Stammkötter, Frank Walther		056 	Estimation of the residual life of composite structures with impact damage based on ultrasonic testing and numerical simulations Angelika Wronkowitz-Katunin, Wojciech Danek, Andrzej Katunin, Krzysztof Dragan		326 	A quasi-static computational model for interface and phase-field fracture in domains with inclusions Roman Vodička	
352 	Effect of post-processing heat treatment on cyclic plastic behavior of AlSi10Mg aluminium alloy processed by L-PBD R. Fernandes, J.S. Jesus, R. Branco, L.P. Borrego, J.D. Costa, J.A.M. Ferreira		060 	Optimal sensor placement techniques for modal identification of historical masonry structures Amirhosein Shabani, Mahdi Kioumars		416 	Nucleation and propagation of cracks under multi-axial loading in phase-field modelling Camilla Zolesi, Corrado Maurini, Laura De Lorenzis	
331 	Compressive fatigue behaviour of pure Ti scaffolds with compact and porous strands produced by material extrusion additive manufacturing K. Slámečka, A. Kashimbetova, J. Pokluda, J. Kaiser, E.B. Montufar, L. Čelko		210 	Structural integrity of endodontic files using transient thermography and eddy currents testing Guilherme Saldanha, Miguel A. Machado, Telmo G. Santos, Rui F. Martins		533 	A variational approach to Paris-type fatigue law Andrea Rodella, Antonino Favata, Corrado Maurini, Stefano Vidoli	
605 	Tensile and fatigue behaviour of FFF 3D printed PEI Tiago Domingues, Pedro J. Sousa, Daniel F. O. Braga, Pedro M. G. P. Moreira		360 	X-ray Computed Tomography and an erosion algorithm and for rapid defect detection Aaron Wade, Thomas M M Heenan, Paul Shearing		218 	Preliminary phase field implementation for bone fracture considering heterogeneous elastic and fracture properties M. Levy and Z. Yosibash	
509 	Mechanical behavior of Inconel 718 manufactured by high-productivity rate SLM process G. Macoretta, F. Berto, B. D. Monelli		415 	3D tools for building inspection from thermal UAS data Alfonso Lopez, Juan M. Jurado, Antonio Garrido, Ramón Lopez, Ana I. López Lozano, Francisco R. Feito		327 	Phase Field Fracture models for Viscoelastic Materials Ajinkya Dusane, Pietro Lenarda, Marco Paggi	
177 	A study on defect-induced fatigue failures in SLM Ti6Al4V Alloy Litton Bhandari, Vidit Gaur		479 	Study of the Automated Process-Induced Residual Stresses in Multi-Axis Laminates Mohamed M.A. Ammar, Bijan Shirinzadeh		274 	Phase Field Approach to Fracture of Thin-ply Laminates Anatoli A. Mitrou, Albertino Arteiro, Pedro P. Camanho, José Reinoso	

<b>Tuesday, 15:45 - 16:15</b>	<b>COFFEE-BREAK</b>	<b>Lounge</b>
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Tue	Session 6A 16:15-18:00	Room Funchal	Tue	Session 6B 16:15-18:00	Room Lisboa	Tue	Session 6C 16:15-18:00	Room Sydney
<b>Council meeting</b>			TOPIC: TC05 Dynamics of fracture and structural transformations Chair: Vadim Silbershmidt			TOPIC: TC02 Micromechanisms Chair: Erik van der Giessen and Varun Shah		
			Ref:	Title and Author (s)		Ref:	Title and Author (s)	
			039 	Fatigue of austenitic steel: Micromechanics aspects Kachanov M., Pronina Y., Mishakin V.		338 	Atomistic interactions of H at dislocations in iron Varun Shah, Erik van der Giessen, Francesco Maresca	
			059 	Influence of recyclates on mechanical properties and lifetime performance of polypropylene materials Jessica Hinczica, Mario Messiha, Andreas Frank, Gerald Pinter		362 	Contemporary questions in fatigue crack closure: simulation, experiments, effects of material, geometry, load ratio, testing procedure and air humidity Tomáš Vojtek, Pavel Pokorný, Radek Kubíček, Michal Jambor, Pavel Hutař, Luboš Náhlík	
			104 	Experimental investigation of Dynamic strain localization in Additively manufactured Titanium alloys Govind Gour, Nik Petrinic, Antonio Pellegrino		388 	An in-situ analysis of the influence of residual stresses on the fatigue damage evolution in a martensitic spring steel Anna Wildeis, Matthias Thimm, Hans-Jürgen Christ, Robert Brandt, Claus-Peter Fritzen	
			148 	Structural-temporal peculiarities of dynamic deformation of rock Nina Selyutina		472 	Mechanical behaviour of cycled shape memory alloy C. Bellini, V. Di Cocco, F. Iacoviello, L. Mocanu	
			172 	Effect of the impact pulse on the dynamic fracture toughness behavior of high-strength steel and nodular cast iron Kevin Koch, Sebastian Henschel, Lutz Krüger		018 	Intrinsic fracture properties of an epoxy adhesive modified with Core Shell Rubber (CSR) nano-particles Alojz Ivankovic, Dong Quan, Neal Murphy	
			230 	Reformation of Pop-in Judgment in CTOD Standard Using Novel Brittle Crack Propagation Model Incorporating Logical Energy Consumption Law Toru Yagi, Tomoya Kawabata and Yasuhito Imai		571 	Crack initiation and propagation in dual-phase steels through crystal plasticity and cohesive zone frameworks Tuncay Yalçinkaya, Ilbilge Umay Aydiner, Izzet Erkin Ünsal, Berkehan Tatli	
			263 	Dynamic fracture of additively manufactured continuous-fibre composites under ballistic impact: experimental and numerical study Md Niamul Islam, Konstantinos P. Baxevanakis, Vadim V. Silberschmidt		208 	Coefficients of the Williams Power Expansion of the Near Crack Tip Stress Field of Continuum Fracture Mechanics at the Nanoscale Larisa Stepanova, Oksana Belova	

Tue	Session 6D 16:15-18:00	Room Berlin	Tue	Session 6E 16:15-18:00	Room Rio de Janeiro	Tue	Session 6F 16:15-18:00	Room Paris
TOPIC: TC15 Structural Integrity of Additive Manufactured Components Chair: Filippo Berto			TOPIC: TC17 Non-Destructive Evaluation Chair: Péter Trampus			TOPIC: Composite materials Chair: Carlos Vicente		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
335 	Application of Deep Learning models to characterize porosity defects in additive manufactured components Satyajit Dey, Zhijin Lyu, Anas Achouri and Abdullah Al Mamun		603 	Digital Image Correlation on a rotating airfoil with independent moving cameras Rodrigo Valente, Pedro J. Sousa, Francisco Barros, Tiago Domingues, Paulo J. Tavares, Pedro M. G. P. Moreira		606 	Transient Response of Collinear Griffith Cracks in a Functionally Graded Strip Bonded between Dissimilar Elastic Strips under Shear Impact Loading Ritika Singh	
537 	Design methodology of vessel produced by L-PBF stainless steel using representative specimens Blasón, S., Chaudry, M., Elorriaga, A., Madia, M., Zerbst, U., Llavori, I., Hilgenberg, K.		604 	Advanced fibre optic sensing structural health monitoring system Tiago Domingues, Pedro J. Sousa, Pedro M. G. P. Moreira		005 	Microstructure and fracture behaviour of the TRIP/TWIP laminate produced by accumulative roll bonding Mikhail Seleznev, Nico Kaden, Christoph Renzing, Matthias Schmidtchen, Ulrich Prah, Horst Biermann, Anja Weidner	
273 	Modification of the Theory of Critical Distances to predict the effect of multiple stress-rising features on resulting fatigue failure of SLM Ti-6Al-4V Bobby Gillham, Andrey Yankin, Fionnan McNamara, Charles Tomonto, David Taylor, Rocco Lupoi		424 	Fracturing and degradation study of an earthen historical wall Mohamed Rouai, Farid Bakadi, Abdelilah Dekayir		102 	Usage of Nanomaterials on Carbon Fibre/Epoxy Composites for Improvement on Their Material Properties Ayse Cagla Balaban, Meltem Evren Toygar	
091 	Wall thickness and scale effect on the quasi-static compression and fatigue performance of AISi10Mg sheet-based lattice structures fabricated via Selective Laser Melting Zhuo Xu, Ricardo Branco, Luis Borrego, Filippo Berto, Seyed Mohammad Javad Razavi		128 	Non-destructive direct current potential drop assessment of forming-induced pre-damage of AISI 5115 steel Lukas Lucker, Lars Lingnau, Frank Walther		142 	Analysis of Compressive Behaviour of Pristine and Cracked 5-Stringer Butt-Joint Panels Made from Carbon Fibre Reinforced Thermoplastic Polymer Jakub Šedek, Jarmil Vlach, Roman Růžek	
107 	Fatigue enhancement using lattice structures for geometrical tailoring Seyed Mohammad Javad Razavi, Zhuo Xu		523 	Determining the cause of incorrect work of bumper paint robot reducer Taško Maneski, Vesna Milošević-Mitić, Ljubica Milović, Miloš Jovanović, Nina Andjelić, Ana Petrović		204 	Failure of a composite riser pipe under operational and spooling loads Igor A. Guz, James C. Hastie, Maria Kashtalyan	
119 	High temperature isothermal fatigue of AM produced hot work steels Dimitrios Nikas, Jens Bergström					324 	Damage-Preserving Transformation from Continuum to Embedded Discrete Microstructure Philip P. Müller, Falk K. Wittel, David S. Kammer	
						455 	Comparison of Shear behavior of Normal and Recycled Aggregates Beams Strengthened with CFRP Sheets and U-wrap anchors J. A. Abdalla, H. Mhanna, R. Hawleh, S. S. Ahmed, A. Omer, O. Abdulkadeer	

<b>Tuesday, 18:30 - 19:30</b>	<b>FIS COCKTAIL</b>	
FRATTURA ED INTEGRITÀ STRUTTURALE COCKTAIL Casino Park Hotel, Conference Venue Funchal		

Wednesday, 29<sup>th</sup> June 2022

WED, 08:45 - 09:20	PLENARY LECTURE VI	Room Funchal
<b>Finite Fracture Mechanics to predict the initiation of new cracks in brittle materials</b> <b>Dominique Leguillon</b> CNRS and Sorbonne University, France Chair: Liviu Marsavina (University of Timisoara, Romania)		
		

WED, 09:20 - 09:55	PLENARY LECTURE VII	Room Funchal
<b>Structural Integrity of prestressed bridges</b> <b>Giuseppe Andrea Ferro</b> Politecnico di Torino, Italy Chair: Paulo Lobo (Universidade da Madeira, Portugal)		
		

WED, 09:55 - 10:30	PLENARY LECTURE VIII	Room Funchal
<b>Dependence of fatigue life on the sequence of individual load cycles of different amplitudes and mean values explained by fracture mechanics</b> <b>Michael Vormwald</b> Technische Universität Darmstadt, Germany Chair: Željko Božić (Faculty of Mechanical Engineering and Naval Architecture, Croatia)		
		

<b>Wednesday, 10:30 - 11:00</b>	<b>COFFEE-BREAK</b>	<b>Lounge</b>
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Wed	Session 7A 11:00-12:45	Room Funchal	Wed	Session 7B 11:00-12:45	Room Lisboa	Wed	Session 7C 11:00-12:45	Room Sydney
TOPIC: TC03 Fatigue of Engineering Materials and Structures Chair: Sabrina Vantadori, Andrea Zanichelli			TOPIC: TC10A Environmentally Assisted Cracking Chair: Olha Zvirko and Mimoun Elboujdaini			TOPIC: TC16 Finite Fracture Mechanics Chair: Zohar Yosibash		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
409 	Comparison of crack propagation rates in selected AISI 304 grades: Three-point bending test Tereza Juhászová, Petr Miarka, Stanislav Seitl, Daniel Jindra, Zdeněk Kala		593 	The effect of solution aggressiveness on the corrosion-induced mechanical properties degradation of aeronautical aluminum alloy 2198 Christina Margarita Charalampidou, Foteini Tazlakidou, Stavros K. Kourkoulis, Mikhail Zheludkevich, Blawert Carsten, Nikolaos D. Alexopoulos		103 	Mixed mode crack initiation from square holes Aurelien Doitrand, Pietro Cornetti, Alberto Sapora, Rafael Estevez	
427 	Influence of crack length and maximum stress on constant amplitude fatigue crack growth rates of metallic alloys E. Amsterdam, J.W.E. Wiegman, M. Nawijn, J.Th.M. De Hosson		199 	Effect of corrosion on fatigue behavior of welded AA2024-T3 alloy V. K. Yadav, V. Gaur, I. V. Singh		058 	Solidification of a water drop – A paradox when multi-cracking O. Haddad, D. Leguillon	
308 	Fracture mechanical investigation of preformed metal sheets using a novel CC-specimen D. Weiß, B. Schramm, G. Kullmer		371 	Initiation and short environmentally assisted crack behavior of new generation 7XXX aluminum revealed by in situ microscopy Tim L Burnett, Ryan Euesden, Yasser Aboura, Al Garner, Cameron Grant, Thomas Jailin, Zak Barrett, Christian Engel, Phil B Prangnell		477 	Crack initiation anisotropy in full-ceramic nacre-like alumina Thomas Duminy, Aurélien Doitrand, Sylvain Meille	
476 	Methodologies for the estimation of the LCF-VHCF duplex P-S-N design curves A. Tridello, C. Boursier Niutta, F. Berto, M. Rossetto, D.S. Paolino		147 	Effects of Liquid Metal Environment on Slip Band Morphology of 316L Austenitic Stainless Steel Fitriani C.A., Gavrilov S., Verbeke K.		333 	Modelling of an indentation induced ring crack using the coupled criterion Roman Papšík, Oldřich Ševeček, Raul Bermejo	
490 	Comparison of lifetimes of stainless steels 304L/4306 and 304L/4307 subjected to ultrasonic fatigue loading Jan Klusák, Kamila Kozáková, Stanislav Seitl		145 	Developing Stress Corrosion Cracking with Corrosion Small Punch Test K. Yuan, R. Clark, M. Mostafavi		288 	Prediction of multiple debonds by an Abaqus implementation of the coupled criterion of FFM and LEBIM M. Muñoz-Reja, V. Mantič, L. Távara, C.G. Panagiotopoulos	
366 	A bending fatigue test method for strip specimens using a 20 kHz ultrasound fatigue testing system Mohamed Sadek, Chantziara K, Nikas D, Bergström J		461 	Combined SCC and EAF Crack Growth Rates for Alloy 600 in a PWR Environment Jack Beswick, Karyn Cooper, Jennifer Borg, Conor Gillen, Stuart Medway, Timothy Watkins, JonathanMann		524 	A finite fracture mechanics approach to thin structural silicone adhesives F. Rheinschmidt, M. Drass, P.L. Rosendahl, J. Schneider	
594 	VHCF under tension/torsion loading of medium carbon steel Pedro R. da Costa, Luís Reis, Manuel Freitas		500 	Visualization of fractographic signs of operational degradation of heat-resistant steel for estimating its actual structure-mechanical state Halyna Krechkovska, Oleksandra Student, Myroslava Hredil, Ivan Tsybailo, Myroslav Holovchuk, Ivan Shtoyko				

<b>Wednesday, 12:45 - 14:00</b>	<b>LUNCH</b>	<b>Restaurant</b>
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Wed	Session 7D 11:00-12:45	Room Berlin	Wed	Session 7E 11:00-12:45	Room Rio de Janeiro	Wed	Session 7F 11:00-12:45	Room Paris
TOPIC: TC06 Fracture mechanics and fracture of advanced ceramics Chair: Pavol Hvizdos			TOPIC: TC09 Concrete: innovative materials and strategies for structural integrity Chair: Giuseppe Ferro, Luciana Restuccia			TOPIC: TC12 Risk analysis and safety of large structures and components Chair: Jose Correia, Aleksandar Sedmak, Abilio de Jesus, Ana Petrović		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
017 	Stress justification of aeronautical structure by modeling of four-point bending tests on bonded woven oxide/oxide ceramic matrix composite joints Thomas Vandellos, Jean-Charles Malenfant, Camille Le Breton		002 	Innovative crystallizing materials for waterproofing concrete L.Restuccia, D. Falliano, G.A. Ferro, G. Cometto		090 	Reliability based structural analysis of a bucket wheel excavator's load-bearing steel structure Ana Petrović, Nikola Momčilović	
417 	Study of the fracture-mechanics behavior of BaTiO3 piezoceramic in the vicinity of transformation temperature Oldřich Ševeček, Zdeněk Chlup, Daniel Drdlík, Hynek Hadraba, Filip Šiška, Karel Maca		332 	Deep learning algorithm for prestressed railway bridge structural safety G. Marasco, F. Oldani, B. Chiaia, G. Ventura, F. Dominici, C. Rossi, F. Iacobini, A. Vecchi		578 	Very high cycle fatigue behaviour of S690 structural steel Rita Dantas, Michael Gouveia, Filipe Silva, Felipe Fiorentin, Abílio de Jesus, José Correia, Grzegorz Lesiuk	
175 	Cement Paste and Cement-Steel Interface Cohesive Parameters Estimates: Supervised Learning on Numerical Simulations Results J. Lhonneur, C. Péliou, F. Jamin, Y. Monerie and M.S. El Youssoufi		525 	Fatigue and fracture properties of concrete mixtures with various water-cement ratio Stanislav Seitl, Anna Benešová, Álvaro Paredes Pascual, Lucie Malíková, David Bujdoš, Vlastimil Bílek		211 	Influence of the fin to baffle distance on temperature, stress distribution and fatigue life of a cooled Exhaust Gas Recirculation (EGR) system Ricardo Pires, Rui F. Martins, Rodolfo Prieto	
323 	Matrix and Interface Cracks in Multiferroics Alexander Schlosser, Andreas Ricoeur		261 	An experimental investigation on the TRM to masonry bond Kuanysh Makashev, Serik Tokbolat		413 	Residual life of a historic riveted steel bridge - engineering critical assessment approach Dorin Radu, Radu Băncilă, Simon Sedmak, Mihajlo Arandelović	
403 	Application of Miniaturized Brazilian Disc Tests for the Determination of High-Temperature Strength of Ceramic Filter Materials Shahin Takht Firouzeh, Martin Abendroth, Bjoern Kiefer		446 	Performance of RC beams externally strengthened with hybrid CFRP and PET-FRP laminates Haya H. Mhanna, Rami A. Hawileh, Ahmad Al Rashed, Jamal A. Abdalla		557 	The Fatigue Crack Initiation in Parabolic Leaf Springs: The FEM-MVM Approach for Random Loadings Vitor Gomes, Abílio de Jesus, José Correia, Rui Calçada	
276 	Exploring new concepts to design "damage tolerant" ceramics using additive manufacturing Raul Bermejo		447 	Effect of flange geometry on the shear capacity of RC T-beams Rami A. Hawileh, Haya H. Mhanna, Jamal A. Abdalla		566 	Report of Cracked Expansion Joint Heat Exchanger Assessment Using Finite Element Analysis: Inspection and Proposal of Work Solutions Amara M, Arroussi C, Hadj Meliani M, Guy pluvillage	
143 	Experimental and numerical study of fracture behaviour of bioinspired alumina-based dental crown composites U. Jargalsaikhan, N. Leung, H. Wan, L. Hui, B. Su, X. Song, T. Sui							

<b>Wednesday, 12:45 - 14:00</b>	<b>LUNCH</b>	<b>Restaurant</b>
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Wed	Session 8A 14:00-15:45	Room Funchal	Wed	Session 8B 14:00-15:45	Room Lisboa	Wed	Session 8C 14:00-15:45	Room Sydney
TOPIC: TC03 Fatigue of Engineering Materials and Structures Chair: Sabrina Vantadori, Andrea Zanichelli			TOPIC: TC10A Environmentally Assisted Cracking Chair: Olha Zvirko and Mimoun Elboudjaini			TOPIC: TC16 Finite Fracture Mechanics Chair: Dominique Leguillon		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
534 	On the key role of crack surface area on the lifetime of arbitrarily shaped flat cracks Louis David, Véronique Lazarus		373 	Challenges of materials and corrosion management: Stress corrosion cracking (scc) & hydrogen embrittlement mechanisms & gaping in our understanding of the subject Mimoun Elboudjaini		441 	Experimental determination of generalized stress intensity factors from full-field measurements R Estevez, A Doitrand and D Leguillon	
538 	AISI P20 steel under VHCF testing conditions Pedro R. da Costa, Luís Reis, Manuel Freitas		201 	Stress corrosion assisted collapse in flat tensile specimens of high-strength structural steel Mihaela Iordachescu, Patricia Santos, Andrés Valiente, Maricely De Abreu		188 	Extending the finite fracture mechanics coupled criterion to quasi-brittle materials – Analytical derivation and experimental evidence Zohar Yosibash and Dominique Leguillon	
194 	Monitoring growing cracks in aircraft lugs by means of the electro-mechanical impedance method Markus Winklberger, Christoph Kralovec, Peter Heftberger, Martin Schagerl		267 	Evaluation of butterfly wing formation in bearing steel: the role of non-metallic inclusions and hydrogen Ksenija Nikolic, Margot Pinson, Tom Depover, Kim Verbeken, Roumen H. Petrov		339 	Dynamic Finite Fracture Mechanics A. Chao Correias, P. Cornetti, M. Corrado, A. Sapor	
050 	Dimension-based failure analysis of formed internal threads in AISi10Mg cast profiles using coupled DT/NDT testing methods Yashar Sarafraz, Sebastian Stammkötter, Alexander Koch, Frank Walther		176 	Anisotropy of hydrogen embrittlement in ferrite-pearlitic steel considering operational degradation Olha Zvirko		527 	Analysis of the ERR for a transverse crack in cross-ply laminates due to residual thermal stresses and its application in the coupled criterion Vladislav Mantič, Israel G. García	
249 	Fatigue damage evaluation of stainless AISI 347 steel by advanced microstructure-sensitive NDT analysis Kai Donnerbauer, Tobias Bill, Peter Starke, Ruth Acosta, Christian Boller, Klaus Heckmann, Jürgen Sievers, Tim Schopf, Frank Walther		471 	Implication of the grain boundary character on the hydrogen embrittlement of nickel alloys: from the diffusion and trapping to the fracture assisted by hydrogen A. Oudriss, S. P. Murugan, J. Bouhattate, M. Landeiro Dos Reis, X. Feaugas		418 	Failure modelling of open cell foam structure using coupled criterion Oldřich Ševeček, Jiří Hanák, Petr Marcián, Zdeněk Chlup and Michal Kotoul	
285 	Influence of twin wire arc spraying and machine hammer peening on the corrosion fatigue of ZnAl4 coatings on S355 J2C + C substrate Michael P. Milz, Andreas Wirtz, Mohamed Abdulgader, Dirk Biermann, Wolfgang Tillmann, Frank Walther		269 	Environmentally induced changes in fatigue life and durability of marine structures and vessels Goran Vizentin, Goran Vukelić, Željko Božić				
616 	Patented Resonant Fatigue Testing Machine to perform HCF (High Cycle Fatigue) and VHCF (Very High Cycle Fatigue) Tests at 1000 Hz on test samples and small components Markus Berchtold		010 	Environmentally Fatigue Analysis of nuclear components within the framework of INCEFA-SCALE project Sergio Arrieta, Sergio Cicero, Kevin Mottershead, Román Cicero, Alec McLennan, Stephan Courtin, Zaiqing Que				

<b>Wednesday, 15:45 - 16:15</b>	<b>COFFEE-BREAK</b>	<b>Lounge</b>
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Wed	Session 8D 14:00-15:45	Room Berlin	Wed	Session 8E 14:00-15:45	Room Rio de Janeiro	Wed	Session 8F 14:00-15:45	Room Paris
TOPIC: Composite materials Chair: Ali Fatemi			TOPIC: TC09 Concrete: innovative materials and strategies for structural integrity Chair: Giuseppe Ferro, Luciana Restuccia			TOPIC: TC12 Risk analysis and safety of large structures and components Chair: Jose Correia, Aleksandar Sedmak, Abilio de Jesus, Ana Petrović		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
190 	Crack arrest by curved interfaces: experimental and numerical analysis M.T. Aranda, I.G. García, J. Reinoso, V.Mantic		541 	Construction and demolition waste, a new life in mortar composites Daniel Suarez-Riera, Luca Lavagna, Devid Falliano, Luciana Restuccia, Matteo Pavese, Giuseppe Ferro		589 	An overview of FASTCOLD project results on cold-formed details fatigue categorization A.M.P. de Jesus, C.D.S. Souto, V.M.G. Gomes, J.A.F.O. Correia, A.A. Fernandes, G. Lesiuk, Alessandro Menghini, Carlo Castiglioni	
510 	On the influence of additive manufacturing defects on the energy absorption capability of a lattice structure Carlo Boursier Niutta, Raffaele Ciardiello, Filippo Berto, Davide S. Paolino, Andrea Tridello		592 	Evaluation of fracture toughness in graphene-based cementitious nanocomposites via electrical impedance E. Tziviloglou, Z. Metaxa, G. Maistros, S. Kourkoulis, N. Alexopoulos		590 	Corrosion inhibition of carbon steel with synthesized surfacts in acidic medium R. Mehdaoui, K. Chouchane, M. Hadj Meliani	
556 	Artificial Neural Networks for Nonlinear and Fracture Micromechanics Hadas Hochster, Ido Meshi, Rami Haj-Ali		405 	Accuracy of models of concrete in square and rectangular columns confined with FRP with different failure strain proposals Mariana Jesus, Paulo Silva Lobo		303 	Finite Element Analysis of Combined Effects of Non-proportional Stressing and Wear Process on Fretting Fatigue Crack Propagation André Luis Pinto, José Alexander Araújo, Reza Talemi	
572 	PTFE-Functionalized WS2 Nanotubes for Friction Applications A. Laikhtman, T. Levin, J.-P. Lellouche, A. Moshkovich, L. Rapoport		535 	Friction effects in uniaxial compression of concrete cylinders Monika Středulová, Jan Eliáš		030 	Experimental investigation of ductile tearing within an aged austenitic stainless steel weld – Four point bending test on pipe F. Tankoua, D. Seyedi, M. Bourgeois, S. Marie, A. Blouin	
101 	Investigation into Mechanical Properties and Failure Mechanisms of Novel Sandwich Composite Material with Carbon Fibre/Epoxy Facesheets and PVC Foam Core Ayse Cagla Balaban, Meltem Evren Toygar		071 	The circularly truncated Brazilian disc Christos F. Markides and Stavros K. Kourkoulis		607 	The Rise of Passive Safety Technological Solutions for Transit Buses Behzad V. Farahani, Nuno Ramos, Pedro Moreira, Rafael Cunha, André Costa, Ricardo Maia, Rui Rodrigues	
585 	Damage evolution in pultruded composite bars using acoustic emission Paweł Zielonka, Szymon Duda, Grzegorz Lesiuk, Michał Smolnicki, Paweł Stabla, Krzysztof Towarnicki		353 	Influence of ITZ between steel inclusion and cement composite on fracture response of specimen Michal Vyhlídal, Jan Klusák, Barbara Kucharčzyková, Petr Daněk, Hana Šimonová, Zbyněk Keršner		522 	Experimental Analysis of Pressure Vessel Welded Joint JR Curves Ljubica Milović, Aleksandar Sedmak, Ivo Blačić, Tomáš Vuherer and Blagoj Petrovski	
454 	Shear Strengthening of Reinforced Concrete T-Beams using Carbon Fiber Reinforced Polymer (CFRP) Anchored with CFRP Spikes J. A. Abdalla, H. Mhanna, R. Hawileh, M. Sharafi, A. Al-Marzouqi, S. Al-Teneiji, K. Al-Ali		611 	Carbon based nanomaterials from food waste as reinforcement in cement-based materials E. Christodoulou, E. Karamfyllidou, G.Z. Kyzas, A.C. Mitropoulos, Z.S. Metaxa		512 	Stress distribution at the crack tip and the dog bone model of the plastic zone measured by synchrotron M. Marx, M. Thielen, F. Schäfer, C. Motz	

<b>Wednesday, 15:45 - 16:15</b>	<b>COFFEE-BREAK</b>	<b>Lounge</b>
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Wed Session YSA 16:15-18:00 Room Sydney		TOPIC: Young Scientist Award Chair: Liviu Marsavina, Aleksandar Sedmak, Pedro Moreira	
Ref:	Title	Author (s)	Candidate
093 	Numerical investigation of laser beam-welded AA2198 joints under different artificial ageing conditions	T.N. Examilioti, A. Germanou, P. Papanikos, N. Kashaev, B. Klusemann, N.D. Alexopoulos	Examilioti Theano
141 	Hydrogen increased ductility due to martensitic transformation versus hydrogen embrittlement in 304L stainless steel: the role of the deformation rate	Lisa Claeys, Tom Depover, Kim Verbeken	Lisa Claeys
150 	Determination of cracks using multiple DC potential drop measurements – FEM Analysis and Experimental Verification of an advanced model	Mike Nahbein, Jürgen Bär	Mike Nahbein
186 	Finite Fracture Mechanics from the macro- to the micro-scale. Comparison with the Phase Field model	Sara Jiménez Alfaro, Dominique Leguillon, José Reinoso Cuevas	Sara Jiménez
240 	Nickel-Titanium peripheral stents: can fracture mechanics shed light on their fatigue failure?	Francesca Berti, Alma Brambilla, Roberto Porcellato, Luca Patriarca, Lorenza Petrini	Francesca Berti
245 	Fractographic challenges for the determination of the critical hydrogen content in high-strength steel wires	Mathias Truschner, Hubert Köberl, Peter Gruber, Gregor Mori	Mathias Truschner
340 	Computational semi-analytic code for stress singularity analysis	M.A. Herrera-Garrido, V. Mantič, A. Barroso	Maria Herrera
539 	Multiscale Optical Methods to Measure the Fatigue Crack Closure	Behzad V. Farahani, Pedro J. Sousa, Frederico Direito, Paulo J. Tavares, Luis Filipe Borrego, Pedro Moreira	Behzad Farahani
553 	Digital image correlation for accurate strain measurement in sharp notched specimens	Koščo, T., Chmelko, V.	Tomáš Koščo

Ref	Title	Author (s)
026 	Microstructural fracture mechanisms and wear damage of the Si <sub>3</sub> N <sub>4</sub> -Ag-GNP composites prepared by SPS	Pavol Hvizdoš, Viktor Puchý
036 	History of ductile-to-brittle transition problem of ferritic steels	Branislav Djordjevic, Aleksandar Sedmak, Sreten Mastilovic, Blagoj Petrovski
051 	Effects of residual stress on fatigue crack growth rate in electron beam welded 316L pipes	Simon McKendrey, Mehdi Mokhtarishirazabad, Harry Coules, Clémentine Jacquemoud, Mahmoud Mostafavi
057 	Fracture surface analysis of undermatched welded joint of martensitic steel	Nenad Milošević, Aleksandar Sedmak, Gordana Bakić, Olivera Popović, Radica Prokić-Cvetković
068 	Probabilistic approach and fault-tree analysis for increased bucket wheel excavator welded joints reliability	Dušan Arsić, Aleksandar Sedmak Ružica Nikolić, Aleksandra Arsić, Ljubica Radović
069 	Effect of high-power electromagnetic pulses and dielectric barrier discharge on the microhardness and physicochemical properties of natural minerals	Igor Bunin, Nataliya Anashkina, Irina Khabarova
076 	Influence of DMLS printing orientation on the strength of materials before and after heat treatment	Rafael Miozga, Marta Kurek, Andrzej Kurek, Marcin Wachowski
078 	Optimal placement of coupling elements of RC shear walls using endurance time method	Ali Kheyroddin, Reza Arabsarhangi, Amirhosein Shabani, Mahdi Kioumars
082 	Numerical analysis of CuMg alloys susceptibility to cold working processes	Małgorzata Zasadzińska, Paweł Strzępek, Szymon Kordaszewski
083 	Susceptibility to deformability of novel CuMg alloys characterized with high wt. % of Mg	Paweł Strzępek, Małgorzata Zasadzińska, Miłosz Bogusz
092 	Wall thickness effect on the quasi-static compression and fatigue properties of Inconel 718 uniform sheet-based lattice structures fabricated via Selective Laser Melting	Zhuo Xu, Tao Wu, Filippo Berto, Seyed Mohammad Javad Razavi
095 	Experimental study of strength and fracture toughness of laser-blasted glass	Erik Calvo-García, Rafael Comesaña, Antonio Riveiro, Jesús del Val, Aida Badaoui, Félix Quintero, Mohamed Boutinguiza, Fernando Lusquiños, Juan Pou

100 	CTOD Evaluation of Api X80mo Psl2 Tmcp Steel Welded Joints Used In Offshore Structures Based On Api Rp 2z	Tadeu Messias Donizete Borba, Heitor Cezar da Silva, Leandro Matos Lopes Soares, Leonardo de Oliveira Turani, Louriel Oliveira Vilarinho
105 	Assessment of the influence of the process parameters selection on fatigue life of laser powder bed fusion-fabricated Ti-6Al-4V	Harry O. Psihoyos, George N. Lampeas, Spiros G. Pantelakis
124 	Risk based assessment of structural integrity of corroded oil drilling pipe	Aleksandar Sedmak, Radzeya Zaidi, Snezana Kirin, Igor Martic, Ivana Vucetic, Tamara Golubovic
125 	Effects of Over-Loading of Pipeline made of HSLA steel	Igor Martić, Aleksandar Sedmak, Lazar Jeremić, Blagoj Petrovski, Simon Sedmak
126 	Some problems of xFEM application for turbine shaft life prediction	Nikola Milovanovic, Branislav Djordjevic, Simon A. Sedmak, Aleksandar Sedmak, Igor Martic
166 	Finite element modeling of the mesoscale fracture of Ti-6Al-4V lattice structures using microtomography	Michał Doroszko, Andrzej Seweryn
167 	Numerical study on the effect of defects in additive manufactured titanium lattice struts on its fracture initiation	Michał Doroszko, Andrzej Seweryn
181 	Fatigue fracture analysis of notched and unnotched 7075-T6 after RRA heat treatment and plasma nitriding	Elisa Gombio Rocha, Maria Gabriela Galvão Camarinha, Leonardo Contri Campanelli, Luis Reis, Antônio Augusto Couto, Danieli Aparecida Pereira Reis
182 	A study of fatigue in smooth and notched 7075-T6 aluminum specimens after RRA heat treatment and plasma nitriding	Maria Gabriela Galvão Camarinha, Leonardo Contri Campanelli, Miguel Justino Ribeiro Barboza, Luis Reis, Antônio Augusto Couto, Danieli Aparecida Pereira Reis
207 	Use of width-tapered cantilever beam for assessment of adhesion strength in PV modules aged in the hot and humid climate of southern India	Umang Desai, Aparna Singh
212 	Ab initio study of hydrogen embrittlement in binary nickel alloys	Aman Prasad, Isabelle Braems, Ranim Mohamad, Frédéric Christien, Franck Tancret
213 	Fatigue Behavior Characterization of the 7108 Aluminum Alloy shot peened and laser shock peened	G.F.C. Almeida, M.E. Fitzpatrick, N.A. Smyth, R.L.P. Gonçalves, R.R. Oliveira, N.B. de Lima, R.G. Santos, R.C. Souza, W.C. Silva Junior, C.S. Hattori, A. A. Couto
215 	Modelling of the fracture process zone in wood under mode I condition	Marek Romanowicz

225 	Strength calculations and fatigue tests of welded bus bodywork nodes	Miloslav Kepka, Miloslav Kepka Jr., Radovan Minich
228 	Hydrogen diffusion behavior in iron under static loading	Xiaoming Zhang, Saya Ajito, Tomohiko Hojo, Motomichi Koyama, Eiji Akiyama
246 	Exact solution of equally spaced dislocations row in semi-infinite plate and its application to high-precision analysis of cracks	Koji Fujimoto
280 	Influence of the input electric power and the arc parameters on the lifetime of copper contact samples	Amine Beloufa, Kada Hadda, Mohamed. Amirat, Aissa Boutte
286 	Mode I/II Fracturing of Adhesively Bonded Joints: A modified short bend beam specimen	M.R.M. Aliha, H.G. Kucheki, S.M.J. Razavi
293 	The effect of creep pre-deformation on LCF damage accumulation – model and experimental verification	Adam Tomczyk, Andrzej Seweryn
294 	Topological differences in delamination strength of the human aortic wall	Tsoukala Despoina, Dimitris Sokolis, Stavros K. Kourkoulis
295 	Mechanical response of connections in stone monuments when various shapes of metallic connectors are used	Stavros K. Kourkoulis, Ermioni D. Pasiou, Andronikos Loukidis, Ilias Stavrakas, Dimos Triantis
297 	Damage accumulation modeling of structural materials under fatigue loading at elevated temperature	Anna Falkowska, Andrzej Seweryn
313 	Design and construction of the mechanical structure of CubeSat "PEDEGO-SAT"	Kada Hadda, Mokhtar Ait Amirat, Abaid Ismail, Nassim Aguchari, El Yazid Belaidi, Aissa Boutte
370 	Investigations on the delamination of pre-notched UHMWPE composite plates at the low impact velocity	Rotariu Adrian, Matache Liviu, Bucur Florina, Pulpea Bogdan, Dirloman Florin Trană Eugen
375 	Atomistic and Mesoscale Simulation of Crack-Dislocation Interactions	Benedikt Eggle-Sievers, Elena Jover Carrasco, Marc Fivel, Erik Bitzek
404 	Numerical simulation of EFP impact on armored steel plate	Matache Liviu-Cristian, Rotariu Adrian-Nicolae, Dirloman Florin-Marian, Pană Florina-Iuliana

408 	Interaction of a fatigue crack and a corrosion dimple in a high-strength steel specimen	Lucie Malíková, Pavel Doubek, Tereza Juhászová, Stanislav Seitl
412 	Non-pneumatic tire designs suitable for fused filament fabrication: an overview	Manuel Sardinha, T. Ramos, M. Fátima Vaz, Luís Reis
442 	Delamination Properties of the Aortic Wall	Zdeněk Petřivý, Lukáš Horný, Petr Tichý, Hynek Chlup, Jakub Kronek, Tomáš Adámek, Alžběta Blanková
445 	Advanced UT for structural integrity assessment of welded joints	Mirjana Opačić, Aleksandar Sedmak, Gordana Bakić, Galip Buyukyildirim
467 	Design and development of a bioabsorbable interference screw for fused filament fabrication	Guilherme Opinião, Manuel Sardinha, Nuno A. Ribeiro, Luís Reis
491 	Creep-fatigue interaction mechanisms of lead alloy for subsea cables sheathing	Anette Brocks Hagen, Audun Johanson, Di Wan, Luigi Mario Viespoli, Filippo Berto, Antonio Alvaro
497 	Effect of reinforcement parameters on the impact resistance of cementitious composites for vehicle restraint systems	Martina Drdlová, Marek Šebík
498 	Effect of production technology on high strain rate characteristics of Reactive Powder Concrete	Martina Drdlová, Petr Bibora, Petr Bohm
502 	Peculiarities of fatigue cracks growth in steel and composite sucker rods	Halyna Krechkovska, Bogdan Kopey, Bohdan Bakun, IhorKopey
508 	Effects of High-Pressure Hydrogen Gas Exposure on Residual Stress Fields and Cracks around Vickers Indentations in Si crystals	Hiroshi Nishiguchi, Masato Ino, JunFujise, Toshiaki Ono, Masaaki Tanaka and Kenji Higashida
519 	Finite element modelling of creep crack growth in P91 steel weldments	Ana Maksimović, Mohamed SWEI, Aleksandar SEDMAK, Ljubica MILOVIĆ and Bojana ZEČEVIĆ
521 	Numerical Simulation of 14MoV6 3 steel CT-Specimen Fracture Behavior	Bojana Zečević, Aleksandar Grbović, Ana Maksimović, Simon Sedmak, Ljubica Milović And Vujadin Aleksić
538 	Effects of High-Pressure Hydrogen Gas Exposure on Residual Stress Fields and Cracks around Vickers Indentations in Si crystals	Hiroshi Nishiguchi, Masato Ino, JunFujise, Toshiaki Ono, Masaaki Tanaka and Kenji Higashida

540 	Fatigue behavior of ti6al4v alloy coated with sic layer and Cr interlayer deposited by magnetron sputtering with hipims and dc sources	Alexandra A. Arbex, L. Reis, Gisele F. C. Almeida, Marcos Massi, Abrão C. Merij, Antônio A. Couto
561 	Fatigue Strength Properties of 18Ni Martensitic Steels as a Function of Microstructure Size	Shun Kino, Daisuke Itoh, Shigeru Hamada
562 	Effect of Surface Microstructure on Fatigue Strength of Non-combustible Mg Products Fabricated by Selective Laser Melting	Akihiro Kurafuji, Bryan Steve Proaño Sarauz, Shigeru Hamada
563 	Fracture Toughness Measurement of Non-Combustible Mg Products Fabricated by Selective Laser Melting in As-Built Conditions	Taeseul Park, Bryan Steve Proaño Sarauz, Shigeru Hamada
565 	Effects of Temperature on the Mechanical Properties of X60 Elbow Pipe Steel Under Bending Moment Using X-FEM Numerical Method	Arroussi C, Amara M, Hadj Meliani M, Guy pluvinage
568 	Residual stress measurements and weld characterization in wind turbine support structures	Mihai A. Popescu, Daniel F.O. Braga, Mario A.P. Vaz, Francisco J.M.Q. Melo
576 	Failure analysis of the half-shafts of a three-wheeled electric vehicle	Inês Mendes, Eduardo Matos Almas, Luís Reis,
588 	Phase field modeling of fatigue crack growth at constant and variable amplitude loading	Sarim Waseem, Izzet Erkin Ünsal, Tuncay Yalçinkaya
596 	Physical and Mechanical properties of Optical Components produced by Additive Manufacturing	Carlos M. S. Vicente, Ana C. Branco, Marco Leite, António Ribeiro and Luís Reis
610 	Numerical analysis of ballistic impact through FE and SPH methods	Yagmur Göçmen, Hande Vural, Can Erdogan, Tuncay Yalçinkaya
613 	Probabilistic Fatigue Strength Modelling Based on Various Statistical Approaches for a Double-Side Welded Connection	Paulo Mendes, Rita Dantas, José A.F.O Correia, Abílio De Jesus, Nicholas Fantuzzi, Filippo Berto

Wed	SessionTC10B 16:15-18:00	Room Lisboa	Wed	Session 8E 16:15-17:15	Room Rio de Janeiro	Wed	Session 8F 17:15-18:00	Room Paris
<b>TOPIC: TC10B - Round tables and open discussions</b>			<b>TOPIC: TC14 Meeting</b>			<b>TOPIC: FFEMS meeting</b>		
Chair	Milos B. Djukic, Hryhoriy Nykyforchyn, Jesús Toribio, Motomichi Koyama, Andrej Atrens							
<b>Opening</b> 16:15 – 16.20	Introduction – Opening of the session TC10B Round tables with panel discussions							
<b>Round table 1</b>								
Chair	Milos B. Djukic, Emilio Martínez-Pañeda, Xavier Feaugas, May L. Martin, Tom Depover							
Presentation 1 16.20 – 16.45	Methodological developments in practical evaluation and microstructural analysis for hydrogen embrittlement <i>Motomichi Koyama</i>							
Panel discussion 1 16.45 – 17.00								
<b>Round table 2</b>								
Chair	Motomichi Koyama, Antonio Alvaro, Tomohiko Hojo, Zhiliang Zhang, Yann Charles							
Presentation 2 17.00 – 17.25	Hydrogen embrittlement of additive manufactured alloys: Challenges ahead of us <i>Tom Depover</i>							
Panel discussion 2 17.25 – 17.35								
<b>Round table 3</b>								
Chair	May L. Martin, Emilio Martínez-Pañeda, Xavier Feaugas, Per Ståhle, Milos B. Djukic, Motomichi Koyama,							
Presentation 3 17.35 – 18.00	Current status and future perspectives of HE research in Norway Antonio Alvaro Challenges and opportunities in modelling hydrogen assisted fractures Emilio Martínez-Pañeda							
Panel discussion 3 18.00 – 18.10								
<b>Closing</b> 18.10 – 18.15	Closing of the TC10B “Hydrogen Embrittlement”, Round table and panel discussions							

Wednesday, 19:00 - 20:00

SUNSET



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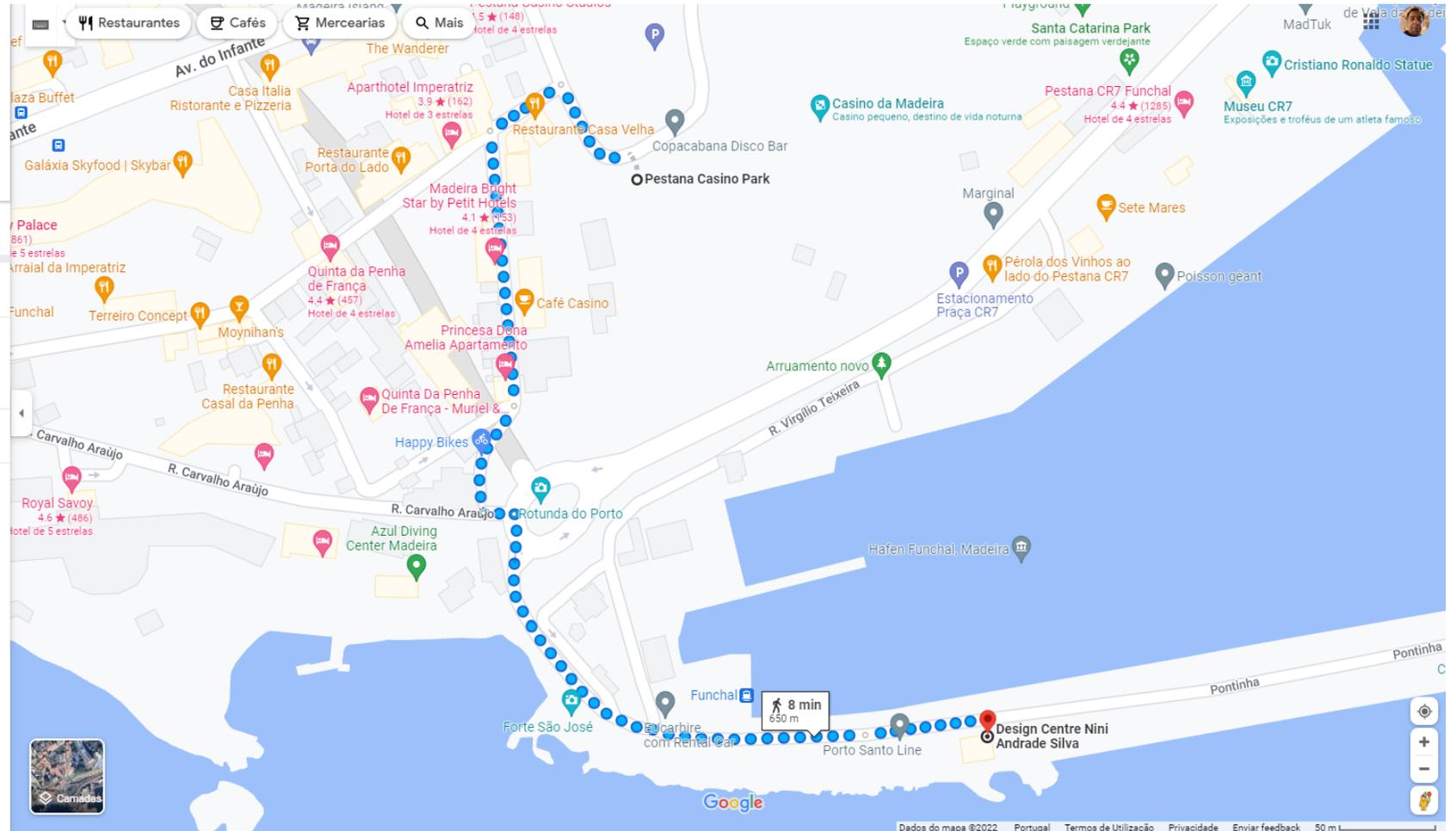
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Thursday, 30<sup>th</sup> June 2022

THU, 08:45 - 09:20	PLENARY LECTURE IX	Room Funchal
<b>Revisiting Cleavage Fracture Modeling in Steels: From the Griffith Assumption to the Beremin Model, and Beyond</b> <b>Claudio Ruggieri</b> Faculty of Engineering, University of Sao Paulo Brazil Chair: Per Ståhle (Lund University, Sweden)		



THU, 09:20 - 09:55	PLENARY LECTURE X	Room Funchal
<b>Void-based predictive framework for hydrogen embrittlement</b> <b>Zhiliang Zhang</b> NTNU, Norway Chair: Bamber Blackman (Imperial College, UK)		



THU, 09:55 - 10:30	PLENARY LECTURE XI	Room Funchal
<b>Creating a new generation of functional multi-material fatigue resistant solid-state joints</b> <b>Filippo Berto</b> Norwegian University of Science and Technology, Norway Chair: Ali Fatemi(The University of Memphis, Memphis, TN, USA)		



<b>Thursday, 10:30 - 11:00</b>	<b>COFFEE-BREAK</b>	<b>Lounge</b>
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Thu	Session 9A 11:00-12:45	Room Funchal	Thu	Session 9B 11:00-12:45	Room Lisboa	Thu	Session 9C 11:00-12:45	Room Sydney
TOPIC: TC18 Structural integrity of welded joints Chair: Aleksandar Sedmak			TOPIC: High and very high cyclic loading Chair: Manuel Freitas			TOPIC: TC16 Finite Fracture Mechanics Chair: Vladislav Mantic		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
350 	Structural integrity of welded joints with different defect combinations – previous studies Mihajlo Aranđelović, Simon Sedmak, Radomir Jovičić, Aleksandar Sedmak, Ana Petrović		006 	In situ damage monitoring during ultrasonic fatigue testing by the advanced acoustic emission technique M. Seleznev, A. Weidner, H. Biermann, A. Vinogradov		137 	Size effect and finite fracture mechanics. Application to the study of microcracks initiation in particle reinforced composites I.G. García, J. Justo, A. Zurita, V. Mantic, M.T. Aranda	
351 	Optimisation of numerical models of welded joints with multiple defect combinations Mihajlo Aranđelović, Simon Sedmak, Radomir Jovičić, Ana Petrović, Stefan Dikić,		047 	Medium carbon steels: when and why do low loads and holding times increase lifetime? Max Benedikt Geilen, Marcus Klein, Robert Kühne, Matthias Oechsner		008 	Extension of Finite Fracture Mechanics to dynamic crack initiation A. Doitrand, G. Molnar, D. Leguillon, E. Martin, N. Carrère	
451 	Friction Stir Welding parameters effect on static and fatigue strength of dissimilar aluminum to polymer matrix composite joints A. Correia, P. Santos, V. Infante, D. Braga		079 	20kHz cantilever VHCF bending fatigue of high strength strip steels Katerina Chantziara, Bergström Jens, Sadek Mohamed, Tofique Waqas, Grehk Mikael		385 	Finite Element implementation of the Coupled Criterion based on the Principle of Minimum Total Energy subjected to a Stress Condition to predict crack onset and growth A.S. Karthik, V. Mantič, M. Paggi, M. Muñoz-Reja, L. Távara	
488 	Determination of ductile-to-brittle transition temperature of NIOMOL 490K steel welded joints Ana MAKSIMOVIĆ, Ljubica MILOVIĆ, Bojana ZEČEVIĆ, Branislav DJORDJEVIĆ, Srdjan BULATOVIĆ and Vujadin ALEKSÍĆ		094 	Experimental research on high cycle fatigue failure of hot forging tool steels Erik Calvo-García, Sara Valverde, David Álvarez, Antonio Riveiro, Manuel Román, César Magdalena, Pablo Pou-Álvarez, Aida Badaoui, Rafael Comesaña		206 	On the effect of residual strength on debonding mechanism in the direct shear test A. M. Mirzaei, M. Corrado, A. Sabora, P. Cornetti	
516 	Cold Pressure Welding of aluminium: conventional and FIB-assisted microscale techniques Ambra Celotto, Øystein Grong, Randi Holmestad, Jørgen A. Sørhaug, Jan Torgersen, Per Erik Vullum, Di Wan, Filippo Berto		187 	Tribological adaption of a failure hypothesis for fretting fatigue based on the local parameters slip amplitude and contact pressure Denny Knabner, Lukáš Suchý, Sebastian Vetter, Alexander Hasse		603 	Digital Image Correlation on a rotating airfoil with independent moving cameras Rodrigo Valente, Pedro J. Sousa, Francisco Barros, Tiago Domingues, Paulo J. Tavares, Pedro M. G. P. Moreira	
528 	Analysis of the material properties in the vicinity of the bi-material interface made by the laser clad protective layer on the S960 Pavel Doubek, Lucie Malíková, Stanislav Seitl		196 	Quantification of fatigue damage and its effect on fatigue limit Bowen Chen, Shigeru Hamada		144 	Investigation of the Influence of Osteoporosis and Aging on Periprosthetic Femoral Fractures using Finite Element Analyses N.S. Henniscke, M. Sander	
096 	3D Computational Welding Mechanics applied to IN625 Nickel-Base Alloy P. Ferro, G. Edison, H. Vemanaboina, F. Bonollo, F. Berto, F. Leoni		205 	Quantification of the Strain Rate Effect in VHCF Testing of Structural Steels Milne, L., Gorash, Y. Comlekci, T., Mackenzie, D.		326 	A quasi-static computational model for interface and phase-field fracture in domains with inclusions Roman Vodička	

Thursday, 12:40 - 14:00	LUNCH	Restaurant
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Thu	Session 9D 11:00-12:45	Room Berlin	Thu	Session 9E 11:00-12:45	Room Rio de Janeiro	Thu	Session 9F 11:00-12:45	Room Paris
TOPIC: Static and quasi-static / Polymers Chair: Paulo Tavares			TOPIC: Cyclic loading / Metallic materials Analytical Computational Chair: Behzad Farahani			TOPIC: Thermal loadings / High operating temperatures Chair: Per Stähle		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
004 	Fracture mechanics performance of 3D printed amorphous thermoplastic polymers at impact and quasi-static loading Ralf Lach, Andreas Schmidtke, Luis Castro Key, Beate Langer, Wolfgang Grellmann		531 	Role of stress and thermally -induced martensite transformations on fatigue crack growth in NiTi alloys Sgambitterra, E., Magarò, P., Niccoli, F., Furguele, F., Maletta, C.		061 	Effect of Thermal Shock Cycles on the Shear Strength of Carbon Composite Adhesive Joint Mariusz Klonica	
009 	Analysis of additively manufactured PLA containing notches using Failure Assessment Diagrams Sergio Cicero, Víctor Martínez-Mata, Marcos Sánchez, Sergio Arrieta		217 	Evaluation of fatigue parameters estimation methods with regard to specific ranges of fatigue lives and relevant monotonic properties Robert Basan, Tea Marohnić, Ela Marković		086 	Simulation of crack propagation in a thick walled cylinder using XFEM D. F. Mora, M. Niffenegger, G. Mao	
116 	Biaxial testing of EPDM rubbers for use in the automotive field: development of a fixture for uniaxial testing machines Matteo Migliorato, Alberto Campagnolo, Giovanni Meneghetti, Emanuele Ghirelli, Claudiu Alexandru Ion, Matteo Bergonzoni		052 	A multiscale model for predicting fatigue strength of bainitic steel considering grain boundaries effects by a generalised evaluation method Hongchang Zhou, Zijie Liu, Masao Kinefuchi, Kazuki Shibamura		202 	Integrated model for predicting deformation and cavity growth caused by Coble creep Taiga Fukad, Kazuki Shibamura	
163 	A novel FFT-based homogenization scheme for cohesive zones Felix Bödeker, Pauline Herr, Ramin Moshfegh, Anders Biel, Stephan Marzi		357 	Structural integrity of a self-adaptive grasping system at highly iterative operation Oliver Jorg, Gualtiero Fantoni		243 	On the driving force for creep crack growth O. Kolednik, A. Tiwari, C. Posch, M. Kegl	
164 	Numerical Investigation on the Effect of Fillers on the Fracture Behavior of Adhesives Pauline Herr, Felix Bödeker, Stephan Marzi		410 	An algorithm to improve critical plane factors detection Andrea Chiocca, Francesco Frendo, Giuseppe Marulo		146 	Multiphysics FE-analysis and measurements for thermo-mechanical fatigue crack growth rate testing applications A. Sulamanidze, V. Shlyannikov	
374 	Modeling flexible graphite under uniaxial compression loading and nano-indentation E. Solfiti, Wan Di, A. Alvaro, F. Berto		481 	Impact of conductor assembly indentation on the fatigue properties of copper power cable wires Luigi Mario Viespoli, Audun Johanson, Anette Brocks Hagen, Di Wan, Filippo Berto, Antonio Alvaro				
251 	The effects of stress triaxiality on the neck initiation and fracture of high-density polyethylene (HDPE) Md Shafiqul Islam, Pratik Rajesh Powar, Eskil Andreasson, Viktor Petersson		149 	Numerical modeling of energy dissipation during fatigue crack propagation in metals A. Kostina, A. Izuimova, O. Plekhov				

<b>Thursday, 12:40 - 14:00</b>	<b>LUNCH</b>	<b>Restaurant</b>
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Thu	Session 10A 14:00-15:45	Room Funchal	Thu	Session 10B 14:00-15:45	Room Lisboa	Thu	Session 10C 14:00-15:45	Room Sydney
TOPIC: TC18 Structural integrity of welded joints Chair: Alberto Campagnolo			TOPIC: High and very high cyclic loading Chair: Luis Reis			TOPIC: TC05 Dynamics of fracture and structural transformations Chair: Vadim Silbershmidt		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
298		Experimental and numerical investigation of the fatigue strength improvement of welded structures submitted to an initial overload Heyraud Hugo, Mareau Charles, Bellon Tom, Lefebvre Fabien, Morel Franck, Jubin Laurent, Amuzuga Philippe, Hauteville Robin, Daniel Bellett, Leblanc Theo	277		New resonance horn and specimen designs for mixed mode ultrasonic fatigue test Jungsub Lee, Longguan Jin, Byoung-Ho Choi	382		Analogy between crack initiation due to dynamic pulse load and mass-spring system failure: fracture delay effect Yuri Petrov, Nikita Kazarinov, Alexandr Utkin
253		Opportunities and partial problems of HFMI implementation in design of welded structures of rail vehicles Miloslav Kepka Jr., Miloslav Kepka., Jan Tittel	312		Robust Determination of Fatigue Crack Propagation Thresholds from Crack Growth Data Josef Arthur Schönherr, Larissa Duarte, Mauro Madia, Uwe Zerbst, Max Benedikt Geilen, Marcus Klein, Matthias Oechsner	384		Growth of multiple cracks grouped into different arrays Yulia Pronina, Abdulla Abakarov
247		Experimental research of dissimilar metal weld and reactor pressure vessel weld metal in the ductile to brittle transition regime Laura Sirkiä, Pentti Arffman, Sebastian Lindqvist, Noora Hytönen, Jari Lydman, Yanling Ge, Pekka Nevasmaa, Zaiqing Que, Iikka Virkkunen	317		Comparison of crack closure estimated by 3D finite element modelling and by strip-yield model Radek Kubíček, Tomáš Vojtek, Pavel Pokorný, Pavel Hutař	434		On the non-monotonic behaviour of the dynamic yielding diagram and the incremental relaxation plasticity model Shixiang Zhao, Grigory Volkov, Yuri Petrov
244		Search for Good Local Compression Process Condition with Bayesian Optimization Takumi Ozawa, Tomoya Kawabata, Yoshiki Mikami	365		Fatigue life assessment in the very high cycle regime of AISI 316L stainless steel after additive manufacturing M. F. Andrade, A. T. Junior, J. Gutjahr, M. V. Pereira, M. C. Teixeira, T. L. A. Castro	438		Comparison of incubation time approach with scaling law through SPS-data processing method Grigory Volkov, Yuri Petrov
520		Effect of temperature and specimen orientation on Charpy impact toughness Bojana Zečević, Ana Maksimović, Ljubica Milović, Srđan Bulatović, Vujadin Aleksić	452		Very High Cycle Fatigue tests: temperature increase and material's performance M.C. Teixeira, M.F. Andrade, M.V. Pereira	597		Model for Determination of Equivalent Stress During Combined Fatigue Loading of Pre-Deformed Metastable Austenitic Steel Nenad Gubelj, Darko Jagarinec
315		Toughness of an electron-beam welded 0.2C quenched and partitioned steel Sakari Pallaspuuro, Ann-Christin Hesse, Tim Engelke, Johannes Sainio, Sumit Ghosh, Vahid Javaheri, Klaus Dilger, Jukka Kömi	499		Fatigue-life estimation for non-stationary excited structures A. Zorman, J. Slavič, M. Boltežar	465		Size effect in PLA and PETG specimens obtained using FDM Livia Marsavina, Mihai Marghitas, Estera Valean
348		Multiaxial fatigue assessment of arc-welded steel joints with weld ends for automotive application according to the peak stress method Giovanni Meneghetti, Jacopo Pelizzari, Alberto Campagnolo, Carlo Dengo	609		Darkfield lighting system for cylindrical specimen crack growth monitoring Nuno Viriato, Paulo Tavares, Francisco Barros	TOPIC: TC13 Modern methods for teaching and education in fracture mechanics Chair: Liviu Marsavina		
						120		International Fracture Mechanics Summer Schools in ex-Yugoslavia and Serbia from 1980-2008 – in memory to Prof. Stojan Sedmak Aleksandar Sedmak, Blagoj Petrovski, Simon Sedmak
						299		Early Stage Researchers training in the framework of SIRAMM project Livia Marsavina, Aleksandar Sedmak, Lubos Nahlik, Roberto Brighenti, Filippo Berto

<b>Thursday, 15:45 - 16:15</b>	<b>COFFEE-BREAK</b>	<b>Lounge</b>
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Thu	Session 10D 14:00-15:45	Room Berlin	Thu	Session 10E 14:00-15:45	Room Rio de Janeiro	Thu	Session 10F 14:00-15:45	Room Paris
TOPIC: Static and quasi-static / Polymers Chair: Behzad Farahani			TOPIC: TC02 Micromechanisms & Fracture/Damage Chair: Emilio Martinez-Paneda			TOPIC: Cyclic loading Chair: Simon Sedmak		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
321 	Fracture mechanical concept to predict crack nucleation in elastic adhesive joints Tobias Duffe, Karina Tews, Gunter Kullmer, Gerson Meschut		318 	Active Learning of Gaussian Approximation Potential: Application to Fracture in Iron Lei Zhang, Gábor Csányi, Erik van der Giessen, Francesco Maresca		546 	Investigation of the Effect of Dwell Period in Load Controlled Fatigue Tests of Inconel 718 Superalloy Numan Berat Yondu, Prof. Murat Baydoğan	
216 	Fracture testing of adhesive joints in mixed-mode I+III Niklas Ladwig, Stephan Marzi		296 	XFEM simulation of dislocation in SixGe1-x alloy under thermal loads Neha Duhan, B.K. Mishra, I.V. Singh		591 	Fatigue crack growth characterization of additively manufactured IN625 and IN718 alloys Felipe Fiorentin, Grzegorz Lesiuk, Paweł Zielonka, Szymon Duda, Konrad Gruber, Szymon Dziuba, Patrycja Szymczyk-Ziółkowska, Jose A.F.O. Correia, Abílio M.P. De Jesus	
395 	Numerical investigation of self-similar crack propagation during DCB test: A comparison between non-elastic behaviours of bonded interfaces Juan Pablo Marquez Costa, Julien Jumel		372 	Damage prediction of ferritic pipeline using Artificial Neural Network Chahboub Yassine, Dr. Szavai Szabolcs		223 	Damage Assessment for Steel Structures Subjected to cyclic pre-strain Rafael Magalhães de Melo Freire, Naoya Oie, Tomoya Kawabata	
501 	Development of a stabilized fracture test on brittle material: proof of concept with a brittle polymer V. Fournier, J.B. Kopp, J. Girardot		314 	Influence of cold rolling on the fracture toughness and fatigue crack growth behavior of pure tungsten Anton Hohenwarter, Simon Pillmeier, Daniel Firneis, S. Wurster, R. Pippan		226 	Structural steel crack propagation experimental and numerical analysis Comlekci, T., Marin, J., Milne, L., Gorash, Y., Mackenzie, D.	
564 	The role of cavitation in stress relaxation creep using a novel cantilever test H Shang, A Fernández-Caballero, E Elmukashfi, T L Martin, K R Hallam, A C F Cocks, P E J Flewitt		551 	In-situ micro-mechanical investigation of cut-edge failure: microstructure-driven crack toughening in laser-cut affected zones J.P.M. Hoefnagels1a, C. Du2, C.C. Tasa3		423 	Fatigue lifetime of GFRP laminates in critical planes defined by equivalent normal and shear stress Karolina Głowacka, Tadeusz Łagoda	
355 	Fatigue crack closure numerical analysis using a three-dimensional model for crack growth and plastic wake C. Esteves, R. Baptista, V. Infante, D. Braga, B. Farahani, P. Moreira		393 	Nonlinear eigenvalue problems resulting from nonlinear fracture mechanics and damage mechanics boundary value problems Larisa Stepanova, Ekaterina Yakovleva		178 	Constants and parameters of the low cycle damage accumulation model with isotropic and kinematic hardening for 25Cr1Mo1V steel Fedorenkov D., Kosov D., Tumanov A.	
						560 	Stress intensity factors in the specimen with a surface semi-elliptical defect Yakovlev M.M.	

Thursday, 15:45 - 16:15	COFFEE-BREAK	Lounge
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Thu	Session 11A 16:15-18:00	Room Funchal	Thu	Session 11B 16:15-18:00	Room Lisboa	Thu	Session 11C 16:15-18:00	Room Sydney
TOPIC: TC18 Structural integrity of welded joints Chair: Paolo Ferro			TOPIC: Biomaterials / Nanomaterials Chair: Michael Vormwald			TOPIC: Static and quasi-static / Metallic materials Chair: José A. Araújo		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
152 	Fatigue limit estimation of welded joints under constant amplitude uniaxial loading adopting the cyclic R-curve analysis Luca Vecchiato, Giovanni Meneghetti, Giovanni Moda, Mauro Madia		007 	Patterns of Structural Formation of Tricalcium Phosphate Nano-coating by Density Functional Method Alla V. Balueva, Ilia N. Dashevskiy, Patricia Todebush, Wynn Kwiatkowski		011 	FRACture mechanics TESting of irradiated RPV steels by means of SUB-sized Specimens Marcos Sánchez, Sergio Cicero, Borja Arroyo, Sergio Arrieta	
193 	Automated FEA-assisted fatigue design of welded structures subjected to variable amplitude multiaxial loads according to the Peak Stress Method Alberto Visentin, Giovanni Meneghetti, Alberto Campagnolo, Luca Vecchiato		085 	Single-Point Laser Scanning Strategy for the SLM Fabrication of Ti-6Al-4V Micro-Strut Lattices: Influence of Strut Size and Orientation C. O'keeffe, C. Lally, D.J. Kelly		081 	Master curve evaluation of ANP-5 steel by using mini-CT specimens Marcos Sánchez, Sergio Cicero, Borja Arroyo, Sergio Arrieta	
195 	Friction stir welds with enhanced fatigue strength and life via laser peening J.R. Antunes, S. Ganguly, Y. Xu, P.E. Irving, D. Furfari, D. Busse, M. Pacchione		221 	Fracture toughness and morphology of block copolymer toughened epoxy Bernd Wetzel, Andreas Klingler, Mohamadreza Nasirzade Tabrizi, Claudius Pirro		183 	Implementation of an s-version finite element method for analyzing elastic-plastic problems Shengwen Tu, Naoto Mitsume, Naoki Morita, Kazuki Shibamura	
250 	Effects of welding on fracture of ASTM A131 steel: statistical investigation Zach Narowlansky Davey, Mehdi Mokhtarishirazabad, Martyn Pavier, Mahmoud Mostafavi		582 	Stress field around cylindrical pore by various surface elasticity models Aleksandra Vakaeva, Mikhail Grekov		287 	Data-driven governed material models for complex loading paths Burcu Tasdemir, Vito Tagarielli, Antonio Pellegrino	
264 	Crystal Plasticity modelling of local microstretches effect on the cyclic behaviour of stainless steel Megan Taylor, Dylan Agius, David Knowles, Mahmoud Mostafavi		463 	Revealing the Intrinsic Ice Adhesion at the Nanoscale Senbo Xiao, Jianying He, Zhiliang Zhang		435 	Characterisation of fracture toughness with sub-size CT samples Y. Madi, C. Belhadj, C. Soret, M. Polo, J. Besson	
238 	Comparison of Macroscopic and Local Cleavage Fracture Assessment of a Reactor Pressure Vessel Steel Weld at Various Loading Rates Johannes Tlatlik		614 	Carbon based cementitious nanocomposites for de-icing applications A. Ekmektsis, A. Rafailidis, A.C. Mitropoulos, Z.S. Metaxa		450 	Experimental Validation of the Formulation for Maximum Socket Depth Estimation of Non-Reduced Strength Bolts Fatih Kocatürk, M. Burak Toparli, Barış Tanrıku, Umut Ince, Cenk Kılıçaslan	
135 	Finer-scale residual stress characterisation in laser-welded Eurofer97 steel for fusion plant Tan Sui					511 	Corrosion of austenitic stainless steels and nickel-based alloys in concentrated phosphoric acid at elevated temperatures A. Laureys, E. Wallaert, L. Claeys, M. Pinson, T. Depover, K. Verbeken	

Thu	Session 11D 16:15-18:00	Room Berlin	Thu	Session 11E 16:15-18:00	Room Rio de Janeiro	Thu	Session 11F 16:15-18:00	Room Paris
TOPIC: Polymers Chair: Abilio Jesus			TOPIC: Static and quasi-static / Composite materials Chair: Željko Božić			TOPIC: Cyclic loading Chair: Tadeusz Łagoda		
Ref:	Title and Author (s)		Ref:	Title and Author (s)				
270 	Effects of coating on the fatigue endurance of FDM lattice structures Francesco Tamburrino, Andrea Chiocca		032 	Experimental strength and fracture analysis of additively manufactured continuous carbon fibre reinforced lugs with load-tailored fibre placement Stefan Sieberer, Markus Winklberger, Chethan Savandaiah, Christoph Kralovec, Martin Schagerl		233 	A continuum fatigue damage model enriched by information from the grain structure Paul Hoffmann, Michael Nelhiebel, Heinz E. Pettermann, Melanie Todt	
586 	Fatigue characterization of polyurethane elastomers Krzysztof Junik, Grzegorz Lesiuk, Paweł Zielonka, Szymon Duda, Wojciech Macek, Jose A.F.O. Correia, Abilio M.P. De Jesus		307 	Investigation of Failure Criteria for Tungsten Carbide-Cobalt Hard Metals M. Burak Toparli, Sezgin Yurtdaş, Sarper Doğan, İ. Burak Özhan		234 	Thermo-mechanical fatigue damage modeling and material parameter calibration for thin film metallizations Paul Hoffmann, Sebastian Moser, Corinna Kofler, Michael Nelhiebel, Daniel Tscharnuter, Balamurugan Karunamurthy, Heinz E. Pettermann, Melanie Todt	
436 	Additive manufacturing of head surrogates for impact analysis R. Mantecón, I. Rubio, J. Díaz-Álvarez & H. Miguélez		342 	Tough and damage tolerant composites for bi-axial loading Drazen Brescakovic, Otmar Kolednik		443 	Interaction between tension and cyclic torsion of non-ferrous materials Tadeusz Łagoda, Joanna Małeczka, Karolina Głowacka, Huang Yuan	
469 	Preliminary results on the optimization of shape memory polymers geometric parameters to enhance the thermal loads activation range F. Cesarano, M. Maurizi, C. Gao, F. Berto, F. Penta, C. Bertolin		367 	Micromechanical analysis of a polymer composite material using Phase-Field fracture coupled with plasticity Juan Macías, Albertino Arreiro, José Reinoso, Pedro Camanho, Fermín Otero		513 	Optimization of nanocrystalline, ultra-fine grained and bimodal nickel according to mechanical properties Michael Marx, Dominic Rathmann, Christian Motz	
364 	Multilayer polymer pipes – The methodology for residual stress determination L. Trávníček, J. Poduška, A. Frank, F. Arbeiter, J. Kučera, J. Sadílek, G. Pinter, L. Náhlík, P. Hutař		440 	Damage evolution predictions on ILTS specimens L. Távara, J.L. Guzmán, E. Graciani		154 	Multiaxial fatigue behavior of a Low nickel/High nitrogen austenitic steel with superimposed static compression and torsional loads Timothy Ngeru, Dzhem Kurtulan, Stefanie Hanke	
468 	Ironing process influence on the warping of ABS parts produced by Fused Filament Fabrication José Lopes, Manuel Sardinha, Afonso Gusmão, Luís Reis, Marco Leite		532 	Modeling of Delamination in CFRP Beams with Elastic Couplings Sylwester Samborski, Jakub Rzeczkowski, Jakub Pašník		112 	Multi-Fractal Scaling Law applied to VHCF with an emphasis on statistical fluctuations Francesco Montagnoli, Stefano Invernizzi, Alberto Carpinteri	
108 	Measurement of strain and temperature by fiber-optic sensors embedded in samples obtained using additive technology Matveenko V.P., Kosheleva N.A., Serovaev G.S.		595 	Damage of the concrete gravity dam under the effect of hydrodynamic loads Hichem MAZIGHI, Mustapha Kamel MIHOUBI				

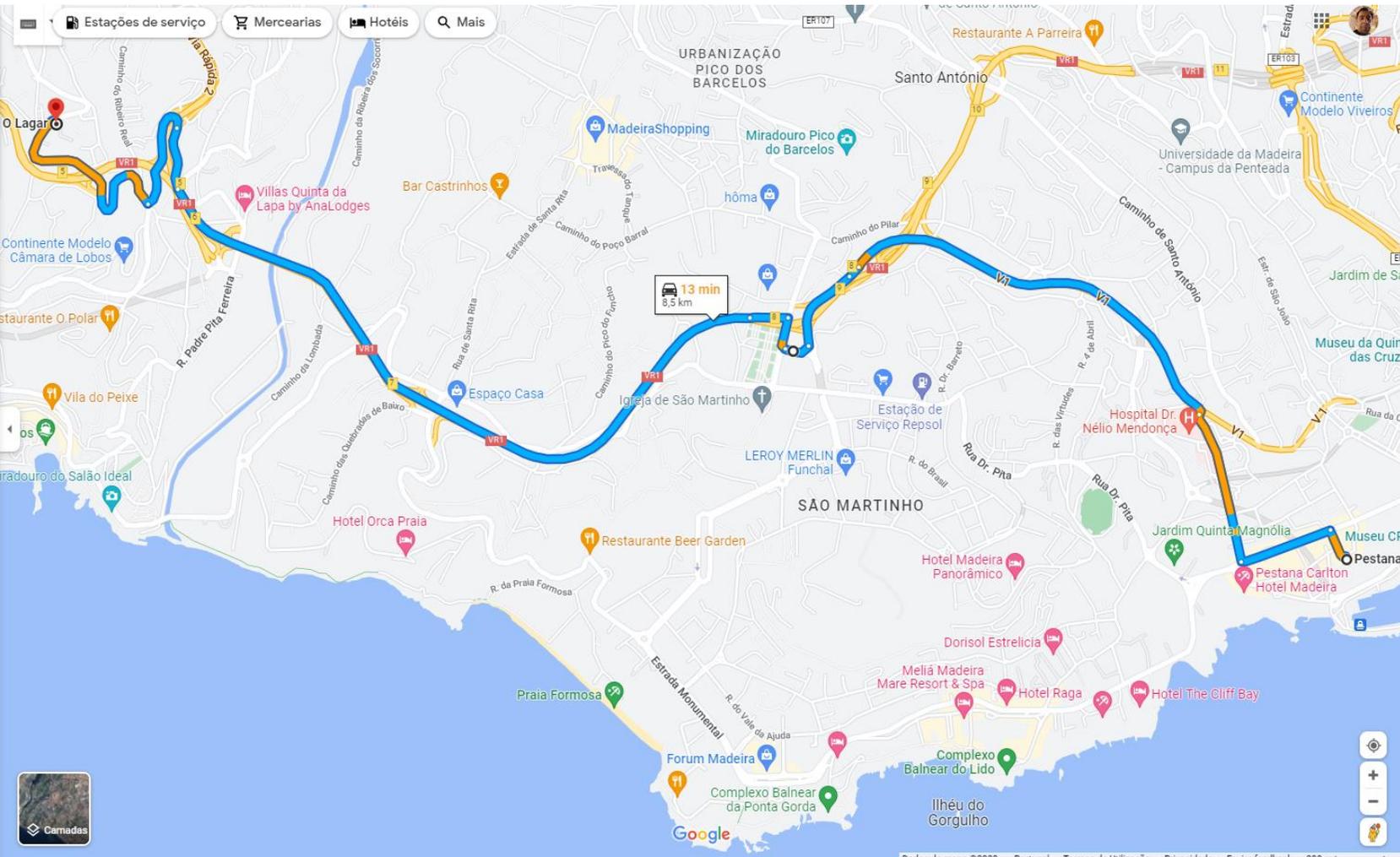
Thursday, 20:00 - 23:00

BANQUET

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Transportation available at the venue hotel entrance at 19h00



Navigation sidebar with icons for car, public transport, walking, cycling, and airplane. It includes search bars for origin and destination, a list of options, and a search section for nearby points of interest like restaurants and hotels.



Friday, 1<sup>st</sup> July 2022

FRI, 08:45 - 09:20	PLENARY LECTURE XII	Room Funchal
<b>Revisiting characteristic region description for crack initiation and early growth in very-high-cycle fatigue</b> <b>Youshi Hong</b> Institute of Mechanics, Chinese Academy of Sciences, China Chair: José Correia (FEUP, Portugal)		
		

FRI, 09:20 - 09:55	PLENARY LECTURE XIII	Room Funchal
<b>Modeling the Contribution of Fiber Bridging in Unidirectional Composites</b> <b>Leslie Bank-Sills</b> The Dreszer Fracture Mechanics Laboratory, Tel Aviv University, Israel Chair: Francesco Iacoviello (University of Cassino and Southern Lazio, Italy)		
		

FRI, 09:55 - 10:30	PLENARY LECTURE XIV	Room Funchal
<b>Simulation of anisotropic thermomechanical fatigue crack growth in nickel base alloys</b> <b>Meinhard Kuna</b> Institute of Mechanics and Fluid Dynamics, TU Freiberg, Germany Chair: Per Ståhle (Lund University, Sweden)		
		

<b>Friday, 10:30 - 11:00</b>	<b>COFFEE-BREAK</b>	<b>Lounge</b>
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Fri	Session 12A 11:00-12:45	Room Funchal	Fri	Session 12B 11:00-12:45	Room Lisboa	Fri	Session 12C 11:00-12:45	Room Sydney
TOPIC: TC03 Fatigue of Engineering Materials and Structures Chair: Sabrina Vantadori, Andrea Zanichelli			TOPIC: TC04 Fracture testing of novel and advanced polymer-based materials with new or unconventional methods Chair: Andreas Brunner, Bamber Blackman			TOPIC: Static and quasi-static loading conditions Chair: Paulo Tavares		
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
099 	Lifetime predictions of notches with small radii in the field of high and very high cycle fatigue Kamila Kozáková, Jan Klusák		122 	How should we define compression after impact fatigue growth in CFRP? Davide Biagini, John-Alan Pascoe, René Alderliesten		034 	Including effect of bending stress parallel to the crack plane on a developed local limit load model Yuebao Lei	
109 	Analysis of the notch effect of weld joint Chmelko, V., Harakaľ, M, Margetin, M., Žlábek, P.		155 	Fatigue delamination growth: is UD testing enough? Mike van der Panne, John-Alan Pascoe		139 	On the localizability of voids in adhesive joints loaded in mode I Dennis Domladovac, Stephan Marzi, Christian Wolf, Igor Kryukov, Martin Kahlmeyer, Stefan Böhm	
161 	Effect of specimen size and thickness on ductile crack growth of a high toughness 316L steel S. Cheng, J. Garnier, B. Marini, J. Besson		222 	Temperature and strain rate dependence of the mechanical response of polymeric syntactic foams under tension and compression loading Yue Chen, Vito Tagariell, Gustavo Quino Quispe, Antonio Pellegrino		180 	Influence of non-singular stresses upon instability of coplanar crack propagation in mixed-mode I+III Jean-Baptiste Leblond, Mathias Lebihain, Laurent Ponson	
536 	Fatigue life prediction of 6060 extruded aluminium Teresa Morgado, Diogo Paulo, Alexandre Velhinho, Mário Pereira, António Mourão		458 	Multiscale phase-field modeling of fracture in short glass fiber reinforced polymers Angela Maria Fajardo Lacav, Fabian Welschinge, Laura De Lorenzis		021 	Macro to Micro in Fracture - A Modification to Griffith Barrier Dov Sherman	
421 	Fretting fatigue of multiaxially loaded shrink-fit connections – effect of material sensitivity on fatigue strength Lukas Suchy, Denny Knabner, Sebastian Vetter, Alexander Hasse		473 	Damage detection of CFRP filament wound tubes using electrical resistance measurement Nikola Schmidová, Tomáš Ponižil, Bohumil Kropík, David Blaha, Zuzana Ficková, Milan Dvořák, Karel Doubrava, Miloslav Poustka, Milan Růžička		272 	A numerical modelling strategy for accurately simulating dynamic crack propagation in a 3D solid based on s-version of finite element method Kazuki Shibanuma, Kota Kishi, Tianyu He, Naoki Morita, Naoto Mitsume	
162 	Investigation on the fatigue resistance of transverse attachments and design of VA fatigue tests Davide Leonetti, Yukina Takai, Koji Kinoshita, Alain Nussbaumer		574 	Can Simple Estimates from Neat Polymers Provide Safe Fatigue Fracture Design Limits for Fiber-Reinforced Polymer Matrix Composites? Andreas J. Brunner		361 	Inverse-designed buckling-resistant lattices Marco Maurizi, Chao Gao, Filippo Berto	
219 	Crack Propagation Life Prediction of a Single Lap Shear Joint: A Linear Elastic Fracture Mechanics Based Machine Learning Approach Zafer Yüce, Paşa Yayla, Alev Taşkın		598 	Validation of the Phase-Field Model for Brittle Fracture Karlo Seleš, Zoran Tomić, Zdenko Tonković, Nenad Gubeljak		184 	High-speed crack propagation analysis in transparent elastic solid based on s-method compared with experiments Tianyu He, Hironori Matsushita, Kazuki Shibanuma	

Fri	Session 12D 11:00-12:45	Room Berlin	Fri	Session 12E 11:00-12:45	Room Rio de Janeiro	Fri	Session 12F 11:00-12:45	Room Paris
TOPIC: Temperature effects Chair: Rui Martins			TOPIC: Manufacturing and engineering Chair: Luís Borrego					
Ref:	Title and Author (s)		Ref:	Title and Author (s)		Ref:	Title and Author (s)	
043 	A CTOD-based crack growth law for thermomechanical fatigue Stephan Gesell, Bernard Fedelich, Rahul Ganesh, Meinhard Kuna, Birgit Skrotzki		121 	The Theory of Critical Distances to perform the static assessment of 3D-printed concrete weakened by manufacturing defects and cracks N. Alanazi, J.T. Kolawole, R. Buswell, L. Susmel				
414 	Early Crack Growth from Notches under Creep-Fatigue Loading Florian Garnadt, Christian Kontermann, Matthias Oechsner		073 	Evaluation of tire vehicle stiffness under drift or cornering forces Francisco Q Melo, Nuno V. Ramos, Pedro G. Moreira, Paulo J. Tavares				
542 	Asymmetric cyclic loading behavior of welded Inconel 740H nickel-based superalloy at 760°C R. S. Rajpurohit, J. K. Sahu		570 	Effect of process parameters on ductile failure behavior of flow forming process Can Erdogan, Hande Vural, Tevfik Ozan Fenercioglu, Tuncay Yalçinkaya				
547 	Processing of top creep and oxidation resistant Fe-Al based ODS alloys P. Dymáček, L. Kunčická, R. Kocich, M. Jarý, N. Luptáková, J. Holzer, B. Mašek, J. Svoboda		517 	Structural Integrity Calculations for Ageing Large Scale Systems Fekete, Tamás				
600 	Experimental structural assessment of conductors in power transformer windings Daniel F.O. Braga, Emanuel E. Almeida, Gonçalo P. Cipriano, Ricardo Lopes, Pedro M.G.P. Moreira		439 	Investigation of micropitting and wear in rolling/sliding contacts operating under boundary lubrication conditions Mushfiq Hasan, Omar D. Mohammed, Marcus Björling, Roland Larsson, Christian Kolar				
608 	Oxidation-Induced Damage Modeling in Micro Gas-Turbines Combustion Chambers Daniele Cirigliano, Felix Grimm, Peter Kutne, Manfred Aigner		559 	A Study of Different Considerations to Meet Gear Design Requirements Omar D. Mohammed				
198 	Effect of Stress Field on TRIP behavior and its influence on fracture behavior of Commercial Stainless Steels at cryogenic temperature Ritsuki Morohoshi, Tomoya Kawabata							

<b>Friday, 12:45 – 13:00</b>	<b>CLOSING SESSION</b>	<b>Room Funchal</b>
<b>ESIS and Conference Organizing Committee</b>		

<b>Friday, 13:00 - 14:00</b>	<b>LUNCH</b>	<b>Restaurant</b>

Friday, 1<sup>st</sup> July 2022

Friday, 14:00

Conference Tour – Optional  
Registration and payment must be  
done individually

departure at the hotel

“Madeira Sight Seeing, Wonders of the East – Santana”

