

PROGRAMME

DRMS 2023

1st International
Conference on Durability,
Repair and Maintenance
of Structures 2023

16-17 March 2023
FEUP, Porto – Portugal

PROGRAMME OF DRMS2023

Author underlined → presenting author

Thursday 16 March 2023		
8:40	DRMS2023 Opening (Room B032)	
	Session 1A – Diagnostics and maintenance methodologies I (Chair: JR Gaxiola-Camacho and M Maslak)	Session 1B – Durability in civil engineering applications I (Chair: M Iwanami and A Akhavan-Safar)
	Room B032	Room Sala de atos (A104)
9:00	An improved method for MDCM approach using a BMW, Dempster-Shafer Theory (DSH) and Fuzzy-TODIM process for risk selection method. A case study for an automotive industry (DRMS23_1) <u>Mzougui</u> (Faculty of Science and Technology, Tangier, Morocco), E Tokgoz, OJ Oliveira, C Santos, Z El Felsoufi	Depolarization time constants – quantifying active rebar corrosion surface area (DRMS23_49) <u>C Zausinger</u> (Technical University of Munich, Germany), K Ostermiski, C Gehlen
9:20	The remaining service time prediction for corroded shell of a steel tank used to store the liquid fuels – alternative safety measures (DRMS23_7) <u>M Maslak</u> (Cracow University of Technology, Poland), M Pantak	The analysis of building materials damage caused by salt crystallization, methods of protection (DRMS23_8) <u>M Koniorczyk</u> (Lodz University of Technology, Poland), D Bednarska, IAN Omrani
9:40	Advancement of risk analysis methods during prolonging the service life of industrial equipment (DRMS23_14) <u>S Belodedenko</u> (Ukrainian State University of Science and Technologies, Ukraine), G Bilichenko, V Hanush, Y Izhevskiy	Frost resistance of self-healed high performance concretes (DRMS23_76) <u>V Bilek</u> (Technical University of Ostrava, Czech Republic), D Bujdos, B Sousedik, L Prochazka, S Seitl, L Malikova
10:00	Structural damage detection using internet of things (DRMS23_87) A Aherwar, TJ Saravanan, <u>M Mishra</u> (University of Minho, Portugal), PB Lourenco	Selection of materials for repairing punctures of metal semi-monocoque aircraft structures (DRMS23_18) <u>I Barca</u> (Military University of Technology, Poland), J Godzimirski, M Roškowicz
10:20	Diagnostic of mechanical systems through vibration source separation (DRMS23_85) <u>D Abboud</u> (Safran Tech, France), M Elbadaoui	Determining damages in buildings and infrastructures based on UAV photogrammetry (DRMS23_71) <u>NC dos Santos</u> (Universidade Lusófona do Porto, Portugal), A Figueiredo, M Lima, S Salazar, R Frauenfelder
10:40-11:00	COFFEE BREAK (Room under the Auditorium)	
	Session 2A – Fatigue and fracture characterization I (Chair: A Akhavan-Safar and M Nakada)	Session 2B – Structural joints durability I (Chair: RJC Carbas and G El-Saikaly)
	Room B032	Room Sala de atos (A104)
11:00	Fatigue durability of bonded structures: Effects of humidity, temperature, and loading mode (DRMS23_2) FVB de Castro Lopes, <u>A Akhavan-Safar</u> (INEGI, Portugal), RJC Carbas, EAS Marques, R Goyal, J Jennings, LFM da Silva	Long term durability of high performance adhesively bonded structures with densified wood (DRMS23_29) S Jalali, CSP Borges, <u>EAS Marques</u> (INEGI, Portugal), RJC Carbas, LFM da Silva
11:20	Fatigue and creep durability of P91 steel (DRMS23_6) <u>H Egner</u> (Cracow University of Technology, Poland), W Egner, S Mroziński	Characterization of the behavior of PSA joints under creep loading (DRMS23_53) <u>BD Simões</u> (INEGI, Portugal), EAS Marques, RJC Carbas, LFM da Silva
11:40	Effect of matrix resin viscoelasticity on statistical creep and fatigue live of unidirectional CFRP under tension load (DRMS23_17) <u>M Nakada</u> (Kanazawa Institute of Technology, Japan), Y Miyano, Y Morisawa, T Nonaka, T Isaki, T Hirano, K Uzawa	Design and testing of adhesively bonded woodworking tools for long term durability (DRMS23_55) DS Correia, P Novo, PJC Neves, <u>EAS Marques</u> (INEGI, Portugal), RJC Carbas, LFM da Silva

12:00	Fatigue crack growth behaviour of a ductile adhesive subjected to tensile overloading (DRMS23_70) FC Sousa (University of Porto, Portugal), A Akhavan-Safar, LFM da Silva	The performance of composite adhesive joints with different hybrid laminates adherends (DRMS23_27) RJC Carbas (INEGI, Portugal), EAS Marques, LFM da Silva
12:20	Fracture toughness in aggressive environments: effect of crack monitoring techniques on test results (DRMS23_52) F Oikonomidis (TWI Ltd, UK)	Inverse design of composite xylophone beams using finite element-based machine learning (DRMS23_67) T Kimura, M Ji (Tokyo Institute of Technology, Japan), R Onodera, Y Sekiguchi, C Sato
12:40	Influence of an elastomeric grommet on the dynamic behavior of a notched specimen subjected to random loads (DRMS23_51) A Chiocci (University of Pisa, Italy), M Sgamma, A Franceschini, A Vestri, F Bucchi, F Frendo	Effect of composite/silicone and metal/silicone interphases on the water uptake of joints and their influence on the failure of the joint (DRMS23_68) CSP Borges (INEGI, Portugal), A Akhavan-Safar, EAS Marques, RJC Carbas, C Ueffing, P Weissgraeber, LFM da Silva
13:00-14:00	LUNCH BREAK (Room under the Auditorium)	
	Session 3A – Durability in civil engineering applications II (Chair: Ch Paglia and CSP Borges)	Session 3B – Diagnostics and maintenance methodologies II (Chair: A Grall and JR Gaxiola-Camacho)
	Room B032	Room Sala de atos (A104)
14:00	Effect of compressive loads on the air-permeability kT of concrete (DRMS23_32) Ch Paglia (University of Southern Switzerland, Switzerland), M Paderi, RJ Torrent	Monitoring of structures – conditions and applications (DRMS23_77) T Koščo, M Semeš, V Chmelko (Slovak University of Technology in Bratislava, Slovakia)
14:20	Deposition and characterization of phase protective layers in the presence of guanidine-derived complexing-type inhibitors (DRMS23_79) YuP Vyshnevskaya (National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Ukraine), IV Brazhnyk	Reliability of steel structures with Chevron bracing systems considering the PBSO philosophy (DRMS23_63) OE Alvarado-Valle, A Gutierrez-Lopez, D Tolentino, JR Gaxiola-Camacho (Autonomous University of Sinaloa, Mexico)
14:40	Functionally graded adhesive patch repairs of wood beams in civil applications (DRMS23_88) RJC Carbas (INEGI, Portugal), GMSO Viana, LFM da Silva	Structural reliability of steel buildings with X-type bracing systems considering the PBSO philosophy (DRMS23_64) A Gutierrez-Lopez, OE Alvarado-Valle, D Tolentino, JR Gaxiola-Camacho (Autonomous University of Sinaloa, Mexico)
15:00	Fungal-microbial interactions impacting the physico-chemical and structural integrity of concrete (DRMS23_35) L Jiang (Imperial College London, UK), N Buenfeld, TR Pettitt, SR Smith	Stochastically deteriorating systems: optimization of a predictive maintenance policy in case of imperfect repair (DRMS23_65) E Mosayebi Omshi, A Grall (Université de Technologie de Troyes, France)
15:20	Experimental study on the influence of shear reinforcement corrosion on the shear resisting mechanism of RC beam (DRMS23_40) R Kuwatsuru (Tokyo Institute of Technology, Japan), M Iwanami, K Nakayama	Loss model for the maintenance of product failures using process capability indices (DRMS23_25) KS Chen (National Chin-Yi University of Technology, Taiwan), CH Chen, CM Yu, SC Chen, CH Wang, WY Kao
15:40	Transport properties as quality assessment of 3D printed concrete (DRMS23_43) J Van Der Putten (Ghent University, Belgium), V Boel, K Van Tittelboom	The safety of space steel truss under fire conditions according to the system analysis (DRMS23_75) K Kubicka (Kielce University of Technology, Poland)
16:00-16:20	COFFEE BREAK (Room under the Auditorium)	
	Session 4A – Repair of composite materials and structures I (Chair: P Tsokanas and AT Marques)	Session 4B – Fatigue and fracture characterization II (Chair: LFM da Silva and Y Miyano)
	Room B032	Room Sala de atos (A104)
16:20	The fracture behaviour of hybrid CFRP laminates reinforced by thin-ply (DRMS23_83) F Ramezani (INEGI, Portugal), RJC Carbas, EAS Marques, AM Ferreira, LFM da Silva	Comparison of strength and cyclic properties of AM and conventional production (DRMS23_78) V Chmelko (Slovak University of Technology in Bratislava, Slovakia), M Margetin
16:40	Modelling the dynamic viscoelastic behaviour of composite systems with frequency and temperature variables (DRMS23_59) PR Nóvoa, AT Marques (University of Porto, Portugal)	Fatigue threshold assessment of a polyurethane adhesive subjected to different temperatures: Load control vs. displacement control strategy (DRMS23_3) D Santos, A Akhavan-Safar (INEGI, Portugal), EAS Marques, RJC Carbas, LFM da Silva

17:00	Development of composite patch for offshore steel repair (DRMS23_45) Q Sourisseau (University Gustave Eiffel, France), M Deydier, S Paboeuf, E Lepretre, S Chataigner, X Chapeleau	Fatigue behaviour of adhesively bonded single lap joints subjected to different environmental conditions (DRMS23_47) FC Sousa (University of Porto, Portugal), A Akhavan-Safar, LFM da Silva
17:20	Application of cohesive elements on large bonded steel patch specimens based on cohesive law calibrated with standard tests (DRMS23_50) M Deydier (Bureau Veritas Marine & Offshore, France), S Paboeuf, Q Sourisseau	Investigation of top-down fatigue cracking failure of recycled plastic asphalt as alternative material (DRMS23_69) OS Abejide (Walter Sisulu University, South Africa), JA Adedeji, MMH Mostafa
17:40	Enhancing durability of composite systems (DRMS23_60) CM Silva, AJ Arteiro, AT Marques (University of Porto, Portugal)	Thirty-five years of research on fracture mode partitioning (DRMS23_80) P Tsokanas (INEGI, Portugal), LFM da Silva
19:00	Poster session and RECEPTION (Room under the Auditorium)	
Durability in civil engineering applications		
Poster 1	A study of engineering properties of cement mortar with electric arc furnace slag (DRMS23_9)	DF Lin, WJ Wang (I-Shou University, Taiwan), DC Cheng, CE Benedict Poh
Vibrations and signal processes		
Poster 2	Investigations of wave propagation properties under heteroscedastic variability (DRMS23_46)	LMMS Ribeiro (University of Campinas, Brazil), VF Dal Poggetto, D Beli, AT Fabro, JRF Arruda
Repair of composite materials and structures		
Poster 3	Effect of temperature history in the process on mechanical properties of thermoplastic resins and composites (DRMS23_72)	R Higuchi (The University of Tokyo, Japan), M Kato, S Oshima, T Yokozeki, T Aoki
Diagnostics and maintenance methodologies		
Poster 4	Lamb waves propagation in SLJs with multiple levels of weak adhesion (MS22_81)	GMF Ramalho (University of Porto, Portugal), AM Lopes, LFM da Silva
Poster 5	Damage metrics for void detection in adhesive joints using electromechanical impedance measurements (DRMS23_80)	AFG Tenreiro (INEGI, Portugal), AM Lopes, LFM da Silva

Friday 17 March 2023

Session 5 – Durability in civil engineering applications III (Chair: M Koniorczyk and HH Lee)	
Room B032	
9:00	Mechanical properties and dynamic bond behavior for plain bars in PC-tendon grouting mortar (DRMS23_10) I Gkolfinopoulos (Tokyo Institute of Technology, Japan), C Nobuhiro
9:20	Durability and sustainability of geo-polymer concrete (DRMS23_16) MM El-Hawary (Kuwait University, Kuwait), M Othman, MF Hamoda
9:40	The influence of 3D printed formwork on the carbonation and chloride penetration resistance of concrete (DRMS23_19) M Bekaert (Ghent University, Belgium), K Van Tittelboom, G De Schutter
10:00	Evaluation of residual prestress in long-term serviced PC girders by PC tendon cutting and FE analysis (DRMS23_24) J Kuwano (Tokyo Institute of Technology, Japan), M Iwanami
10:20	Application of basic oxygen furnace slag to concrete structure (DRMS23_26) S Kuo, HH Lee (National Sun Yat-sen University, Taiwan), I-M Wu, T-Y Chu
10:40-11:00	COFFEE BREAK (Room under the Auditorium)
Session 6 – Repair of composite materials and structures II (Chair: AT Marques and P Tsokanas)	
Room B032	
11:00	The restoration of a highway cement-based tunnel coating system: a case study (DRMS23_11) C Paglia (Institute of Materials and Construction, Switzerland), M Paderi, S Antonietti
11:20	On certifying adhesively bonded structures in different industries (DRMS23_82) F Santandrea, GG Momm, P Tsokanas (INEGI, Portugal), V Rajcic, D Skejic, T Kruse-Strack, D Rajnovic, LFM da Silva

11:40	Experimental and numerical study of thermal residual stresses on multimaterial adherends in single-lap joints (DRMS23_86) <u>BD Simões</u> (INEGI, Portugal), PDP Nunes, F Ramezani, RJC Carbas, EAS Marques, LFM da Silva
12:00	Impact damage and residual strength prediction in CFRP laminates using machine learning (DRMS23_73) <u>S Hasebe</u> (The University of Tokyo, Japan), R Higuchi, T Yokozeki, S Takeda
12:20	Basalt fibers for underwater fatigue repair of steel hydraulic structures (DRMS23_31) <u>GA Riveros</u> (US Army Corps of Engineers, MS, USA), EM Hassan, H Mahmoud
12:40	Multiscale nano-integration in the scarf-bonded repair patches for an enhanced performance of the aircraft composite structures (DRMS23_38) <u>S Topal</u> (Sabanci University Composite Technologies Centre of Excellence, Turkey), A Al-Nadhari, C Yıldırım, B Beylergil, S Unal, M Yildiz
13:00-14:00	LUNCH BREAK (Room under the Auditorium)
	Session 7 – Structural joints durability II (Chair: EAS Marques and C Sato)
	Room B032
14:00	MiG-29 composite bonded repair building block approach (DRMS23_41) <u>P Synaszko</u> (Air Force Institute of Technology, Poland), M Salaciński, K Dragan, A Leski, A Jaworski
14:20	Fatigue performance of externally bonded CFRP composites on concrete: Effect of CFRP bonded length and width (DRMS23_13) <u>A Fathi</u> (University of Quebec, Canada), G El-Saikaly, O Chaallal
14:40	Advances on enhancement D-Sight NDT technique for quantification and monitoring hidden corrosion growth in aircraft riveted structures (DRMS23_21) <u>A Katunin</u> (Silesian University of Technology, Poland), K Dragan, M Nagode, K Lis, K Jozsko, A Cholewa, J Klemenc, S Oman, P Žak, P Synaszko
15:00	The effect of seawater on the static strength and fatigue life of adhesive joints with coated steel adherends (DRMS23_28) <u>M Ortega-Iguña, A Akhavan-Safar, RJC Carbas</u> (INEGI, Portugal), JM Sánchez-Amaya, M Chludzinski, LFM da Silva
15:20	Water uptake behavior of PBT-GF30/silicone adhesive joints at different temperatures and its effect on the mechanical properties of the joint (DRMS23_37) <u>CSP Borges</u> (INEGI, Portugal), A Akhavan-Safar, EAS Marques, RJC Carbas, C Ueffing, P Weissgraeber, LFM da Silva
15:40	The impact of ageing frequency on the mechanical behaviour of adhesively bonded structures subjected to cyclic ageing environments (DRMS23_4) <u>M Moazzami, A Akhavan-Safar</u> (INEGI, Portugal), MR Ayatollahi, JA Poulis, LFM da Silva, ST De Freitas
16:00-16:20	COFFEE BREAK (Room under the Auditorium)
	Session 8 – Structural health monitoring (Chair: AM Lopes and K Worden)
	Room B032
16:20	A novel deep learning vision-based approach to structural damage detection (DRMS23_22) <u>R Lado</u> (IQS School of Engineering, Spain), MA Pérez
16:40	On the use of meta-learning for population-based remaining useful life prediction (DRMS23_42) <u>G Tsialiamanis</u> (University of Sheffield, UK), N Dervilis, DJ Wagg, K Worden
17:00	Void detection in adhesive single lap joints through electromechanical impedance spectrum (DRMS23_48) <u>AFG Tenreiro</u> (INEGI, Portugal), AM Lopes, LFM da Silva
17:20	On the value of information-sharing for degradation models in PBSHM (DRMS23_56) <u>AJ Hughes</u> (University of Sheffield, UK), LA Bull, N Dervilis, K Worden
17:40	Damage detection on adhesive joints using Lamb waves data and supervised machine learning algorithms (DRMS23_61) <u>G Ramalho</u> (University of Porto, Portugal), C Silva, AM Lopes, LFM da Silva
20:00	DRMS 2023 BANQUET (Porto Caves Calém)