

DRMS 2025

2nd International
Conference on Durability,
Repair and Maintenance
of Structures 2025

13-14 March 2025
FEUP, Porto – Portugal



PROGRAMME OF DRMS2025

Author underlined → presenting author

* Plenary lecture

Thursday 13 March 2025	
8:40	DRMS2025 Opening (Room B032)
	Session 1 – Diagnostics and maintenance methodologies (Chair: LFM da Silva and A Silva)
	Room B032
9:00	Seminal developments in the durability assessment of airframes, AM parts and cold spray repairs (DRMS25_1) <u>R Jones</u> (Swinburne University of Technology, Australia), ASM Ang, R Aston, N Phan
9:20	A disassemblable busbar-cell connection for repairable and reusable electric vehicle batteries (DRMS25_65) <u>MM Kasaei</u> (INEGI, Portugal), VB Gomes, RJC Carbas, EAS Marques, LFM da Silva
9:40	Guided ultrasonic wave based damage detection in fiber metal laminates (DRMS25_25) <u>WF Nikiema</u> , <u>N Rauter</u> (Helmut-Schmidt-University / University of the Federal Armed Forces Hamburg, Germany)
10:00	When durability meets efficiency: The role of maintenance in sustainable building lifecycles (DRMS25_27) C Ferreira, W Castro, J Valença, MP Mendes, C Reinhart, <u>A Silva</u> (University of Lisbon, Portugal)
10:20	A machine learning approach for risk-based damage prognosis in engineering populations (DRMS25_30) <u>G Tsialiamanis</u> (The University of Sheffield, UK), N Dervilis, K Worden, AJ Hughes
10:40-11:00	COFFEE BREAK (Room under the Auditorium)
11:00*	An innovative and comprehensive strategy to design and monitor composite structures under in-service fatigue loadings (DRMS25_43) <u>M Quaresimin</u> (University of Padova, Italy), PA Carraro, L Maragoni, M Zappalorto
	Room B032
	Session 2 – Fatigue and fracture characterization (Chair: M Quaresimin and A Akhavan-Safar)
	Room B032
11:40	Mechanical degradation and failure mechanism of additively manufactured carbon reinforced polymers under tensile loading (DRMS25_24) M Mieloszyk, <u>S Bhadra</u> (Polish Academy of Sciences, Poland)
12:00	Durability of transporting pipeline girth welds based on full-scale fatigue and burst tests of replaced pipeline sections (DRMS25_29) <u>J Lukács</u> (University of Miskolc, Hungary)
12:20	Fatigue analysis of auxetic metamaterial for airless tires using finite element method (DRMS25_34) <u>AT Ubando</u> (De La Salle University, Philippines), AP Conversion, NRE Lim, SMA Conejos
12:40	Durability characterization of adhesively bonded structures: A fatigue crack growth perspective (DRMS25_5) <u>A Akhavan-Safar</u> (INEGI, Portugal), RJC Carbas, EAS Marques, LFM da Silva
13:00-14:00	LUNCH BREAK (Room under the Auditorium)
	Session 3 – Durability in civil engineering applications I (Chair: AZ Sampaio and LFM da Silva)
	Room B032
14:00	Innovative characterization of a bio-based zero-thickness adhesive and its integration with densified pine wood (DRMS25_63) <u>Sh Jalali</u> (INEGI, Portugal), RJC Carbas, EAS Marques, LFM da Silva
14:20	Advanced regression model for eco-friendly geopolymers in enhancing durability of concrete structures (DRMS25_60) VP Pilien, <u>JMC Ongpeng</u> (Del La Salle University, Philippines)
14:40	HBIM methodology applied on the reconversion of a heritage building: the structural project (DRMS25_4) <u>AZ Sampaio</u> (University of Lisbon, Portugal), AM Pinto, AM Gomes

15:00	Experimental verification of post-fire brittleness for structural steel using the instrumented Charpy impact test (DRMS25_16) <u>M Maslak</u> (Cracow University of Technology, Poland), M Stankiewicz, P Zajdel
15:20	Corrosion performance of fiber-reinforced self-compacting concrete (DRMS25_61) S Clement, <u>JMC Ongpeng</u> (Del La Salle University, Philippines)
15:40	Finite element modeling of shoring and reshoring system during construction of reinforced concrete multi-story buildings (DRMS25_33) <u>JK Foula</u> (University of Quebec, Canada), G El-Saikaly, A Abo-El-Ezz
16:00-16:20	COFFEE BREAK (Room under the Auditorium)
	Session 4 – Repair of composite materials and structures (Chair: AT Marques and RJC Carbas)
	Room B032
16:20	Debondable bio-adhesive wood joints: Performance evaluation (DRMS25_11) <u>RJC Carbas</u> (INEGI, Portugal), Sh Jalali, EAS Marques, LFM da Silva
16:40	Repair of metal basic structures of industrial equipment during their prolonging the service life with the use of composite materials (DRMS25_13) <u>S Belodedenko</u> (Ukrainian State University of Science and Technologies, Dnipro, Ukraine), G Bilichenko, D Rassokhin
17:00	Assessment of seismic performance of reinforced concrete bridge piers confined with FRP composites (DRMS25_32) <u>G El-Saikaly</u> (University of Quebec, Canada), A Abo-El-Ezz, M Nassar
17:20	Development of a demonstrator to validate a numerical approach for bonded repair (DRMS25_45) <u>AN Zedem</u> (Hamburg University of Applied Sciences, Germany), M Linke, JA García-Manrique
17:40	Hybrid reinforced composite substrates in adhesively bonded joints under quasi-static loading (DRMS25_9) <u>H Malekinejad</u> (INEGI, Portugal), RCJ Carbas, EAS Marques, LFM da Silva
18:00	Comparison of adhesion strength of tricalcium phosphate coatings on titanium versus on titanium dioxide by first-principle calculations (DRMS25_54) <u>AV Balueva</u> (University of North Georgia, USA), IN Dashevskiy, D Lisovenko, W Kwiatkowski, P Todebush
18:30	Poster session and RECEPTION (Room under the Auditorium)
Fatigue and fracture characterization	
Poster 1	Humidity's critical impact on the durability and load-bearing capacity of bonded joints (DRMS25_6) <u>A Akhavan-Safar</u> (INEGI, Portugal), RJC Carbas, EAS Marques, LFM da Silva
Poster 2	Fracture response of flexible adhesives across a wide range of temperatures and strain rates (DRMS25_67) <u>B Hasumi</u> (INEGI, Portugal), A Akhavan-Safar, RJC Carbas, EAS Marques, S Wenig, LFM da Silva
Structural joints durability	
Poster 3	Enhancing performance of adhesive joint using bio-inspired helicoidal composite substrates (DRMS25_10) <u>H Malekinejad</u> (INEGI, Portugal), RCJ Carbas, EAS Marques, LFM da Silva
Poster 4	The performance of adhesive joints with bent composite adherends (DRMS25_12) <u>RCJ Carbas</u> (INEGI, Portugal), VDC Pires, BD Simões, EAS Marques, LFM da Silva
Poster 5	Multimaterial solid-state joining processes for structural repair and reinforcement (DRMS25_19) <u>EAS Marques</u> (University of Porto, Portugal), RJC Carbas, R Beygi, LFM da Silva
Poster 6	Durability of hole hemmed joints in hybrid busbars for electric vehicle batteries (DRMS25_66) <u>MM Kasaei</u> (INEGI, Portugal), BFA da Silva, A Akhavan-Safar, RJC Carbas, EAS Marques, LFM da Silva
Creep failure processes	
Poster 7	Characterization and prediction of static and cyclic creep behaviour in acrylic foam PSAs using an analytical model (DRMS25_8) <u>BD Simões</u> (INEGI, Portugal), EMD Fernandes, EAS Marques, RJC Carbas, S Maul, P Stihler, P Weißgraeber, LFM da Silva
Diagnostics and maintenance methodologies	
Poster 8	Visualizing structural integrity: A flowchart approach to stadium maintenance (DRMS25_17) <u>PSt Louis</u> (Thornton Tomasetti, FL, USA)
Poster 9	Defect and damage detection in “green” laminates using shearography (DRMS25_39) <u>V Pagliarulo</u> (National Research Council, Italy), C Saltarelli, M Paturzo, P Russo
Durability in civil engineering applications	
Poster 10	Inelastic buckling of reinforcing bars - constitutive model for cyclic loads (DRMS25_20) <u>J Korentz</u> (University of Zielona Góra, Poland)
Poster 11	Influence of the rate of aging hazards of components on the building degradation process (DRMS25_21) <u>B Nowogórska</u> (University of Zielona Góra, Poland)

Friday 14 March 2025	
	Session 5 – Structural joints durability (Chair: C Sato and H Wan)
	Room B032
8:40	Strength of adhesively bonded joints under stress conditions of compression-and shearing (DRMS25_49) T Yamazaki, K Ikeda, A Hayato, Y Sekiguchi, <u>C Sato</u> (Institute of Science Tokyo, Japan)
9:00	Investigation of modal testing effectiveness for a bolted joint looseness detection (DRMS25_52) AR Hosseinian, <u>HM Navazi</u> (Sharif University of Technology, Iran), SH Same
9:20	Evaluating peel testing behaviour of acrylic pressure-sensitive adhesives: Insights for enhancing durability (DRMS25_7) <u>BD Simões</u> (INEGI, Portugal), HC Sousa, EAS Marques, RJC Carbas, S Maul, P Stihler, P Weißgraeber, LFM da Silva
9:40	Analytical and numerical investigations of thread stripping in buttress threads (DRMS25_14) <u>L Meouchy</u> (INSA -Toulouse, France), A Daidie, M Paredes
10:00	Joining failures in industrial applications: Case studies on problem solving (DRMS25_18) <u>EAS Marques</u> (University of Porto, Portugal), RJC Carbas, A Akhavan-Safar, LFM da Silva
10:20	Study on the improvement of heterogeneous bonding performance by laser surface treatment (DRMS25_31) <u>H Wan</u> (Tongji University, China)
10:40-11:00	COFFEE BREAK (Room under the Auditorium)
11:00*	Durability of fibre-polymer composites for civil engineering structures: Recent research, design guidance and future perspectives (DRMS25_48) <u>JR Correia</u> (University of Lisbon, Portugal), T Hasan, M Garrido, S Cabral-Fonseca, J Sena-Cruz
	Room B032
	Session 6 – Durability in civil engineering applications II (Chair: JR Correia and J Nseir)
	Room B032
11:40	Image processing techniques for corrosion assessment and retrofitting of aging steel structures (DRMS25_35) <u>A Chira</u> (University of Applied Sciences and Arts Western Switzerland HES-SO, Switzerland), J Nseir
12:00	From scan to sustainability: A comprehensive framework for retrofitting steel roofs (DRMS25_36) <u>J Nseir</u> (University of Applied Sciences and Arts Western Switzerland HES-SO, Switzerland), A Chira, H Brossard
12:20	Crosstalk effects of data acquisition devices on acoustic emission-based inspections (DRMS25_53) <u>GM Rezende</u> (São Paulo State University, Brazil), FG Baptista
13:00-14:00	LUNCH BREAK (Room under the Auditorium)
	Session 7 – Durability in aerospace and marine applications (Chair: A Chira and EAS Marques)
	Room B032
14:00	Semi-analytical damage model applied to the assembly of a composite flange (DRMS25_40) <u>R Hammoum</u> (ISAE-SUPAERO, France), F Lachaud, A Daidie
14:20	Dimensionally stable structures for space applications (DRMS25_28) RM Coelho, P Teixeira, J Cerqueira, <u>AT Marques</u> (University of Porto, Portugal)
14:40	Cold expansion in preloaded bolted joints: a process to increase the fatigue performance of joints (DRMS25_15) <u>A Fau</u> (Institut Clément Ader, France), A Daidié, G Pichon
15:00	Remaining fatigue resistance of bolting assemblies in a wind turbine tower at the end of the planned service life (DRMS25_38) <u>M Schwarz</u> (Fraunhofer IGP, Germany), F Wegener, J Hinrichs, C Stolle, S Güres, M Seidel, R Glienke, W Flügge
15:20	Decades beneath the waves: Unveiling long-term trends in marine pipeline failures (DRMS25_26) <u>A Silva</u> (University of Lisbon, Portugal), MP Mendes, C Ferreira, L Evangelista, J Valença, CG Soares
15:40	Machine learning models for smart monitoring of wind energy farms (DRMS25_51) <u>M Shafiee</u> (University of Surrey, UK), DC Zachariadis
16:00-16:20	COFFEE BREAK (Room under the Auditorium)

	Session 8 – Durability in civil engineering applications III (Chair: LFM da Silva and G Tsialiamanis)
	Room B032
16:20	Extending the service life of orthotropic steel decks by using cold joining technique (DRMS25_37) <u>M Schröder</u> (Hochschule Wismar - University of Applied Sciences, Germany), R Glienke, F Kalkowsky, J Alex, W Flügge
16:40	Innovative reinforcement of wooden substrates using bio-adhesives for single lap joints (DRMS25_64) <u>Sh Jalali</u> (INEGI, Portugal), RJC Carbas, EAS Marques, LFM da Silva
17:00	Assessing the impact of a massive rockslide on Veveyse bridge using finite element simulations (DRMS25_46) <u>S Ismail</u> (Saint Joseph University of Beirut, Lebanon), J Nseir, F Kaddah
17:20	Influence of glass fiber configurations on dynamic characteristics and vibration control in additively manufactured composite beams: Experimental and computational analysis (DRMS25_55) <u>A Raza</u> (Kaunas University of Technology, Lithuania), R Rimašauskienė, M Mieloszyk
17:40	Regularities of coaction and improved design strategies for development of multicomponent inhibitive mixtures (DRMS25_56) <u>Yu P Vyshnevskya</u> (National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Ukraine), IV Brazhnyk
19:30	DRMS 2025 BANQUET (Restaurant Vincci Porta de Ferro)