

07-May	Tuesday		
09:00-14:00	Registration		Room: B001 (atrium desk)
14:00-15:00	Opening session <i>Welcome; NewFrac project - introduction and overview; Conference logistics and instructions</i> Pedro P. Camanho (Organizing Committee); Vladislav Mantič (NewFrac Coordinator)	Chair: Albertino Arteiro	Room: B001
15:00-16:00	<i>Special talk in memory of Dominique Leguillon</i> Zohar Yosibash; Vladislav Mantič	Chair: Pedro P. Camanho	Room: B001
16:00-16:20	Coffee break		Room: Coffee Lounge
16:20-17:20	Computational micromechanics Symposium	Chair: Anatoli Mitrou	Room: B001
16:20-16:40	<i>CERAMIC FRACTURE AT THE MICRO-SCALE. COMPARISON BETWEEN FINITE FRACTURE MECHANICS AND PHASE FIELD MODELLING</i> Sara Jiménez Alfaro; Dominique Leguillon; Corrado Maurini; José Reinoso		
16:40-17:00	<i>Physically Recurrent Neural Networks for Computational Homogenization of Composite Materials with Microscale Debonding</i> Nora Kovacs; Marina Maia; Iuri Rocha; Carolina Furtado; Pedro Camanho; Frans van der Meer		
17:00-17:20	<i>Influence of length of fiber damage models on the final prediction</i> Efstratios Polyzos; Igor Rodrigues Lopes; Pedro Camanho; Lincy Pyl		
17:20-18:00	Multiscale modelling Symposium	Chair: Maxime Levy	Room: B001
17:20-17:40	<i>A phase-field anisotropic model for the multiscale analysis of short fiber reinforced polymers</i> Angela Maria Fajardo Lacave; Fabian Welschinger; Laura De Lorenzis		
17:40-18:00	<i>Second-order computational homogenisation on mesh regularization of strain-softening localization</i> Guilherme Fonseca Gonçalves; Igor A. Rodrigues Lopes; Wanderson dos Santos; Francisco M. Andrade Pires		
	Welcome reception		

08-May	Wednesday		
09:00-10:00	Plenary Lecture 1 <i>The stress-at-a-distance failure criterion applied to thermosets</i> Thomas Pardoen	Chair: Pietro Cornetti	Room: B001
10:00-10:20	<i>Coffee break</i>		Room: Coffee Lounge
10:20-12:40	Finite Fracture Mechanics Symposium 1	Chair: Sara Jiménez Alfaro	Room: B001
10:20-10:40	<i>Combining phase-field regularization and the coupled criterion for crack initiation</i> Doitrand Aurélien; Molnár Gergely		
10:40-11:00	<i>Stress or energy isocontours for 3D interface crack initiation?</i> Hugo Girard; Aurélien Doitrand		
11:00-11:20	<i>Evaluation of Fatigue Life in Notched Composite Laminates Using Finite Fracture Mechanics and Theory of Critical Distance</i> Amir Mohammad Mirzaei; Alberto Saporá; Pietro Cornetti		
11:20-11:40	<i>INNOVATIVE FINITE ELEMENT APPROACH FOR PREDICTING CRACK ONSET AND GROWTH BASED ON THE PRINCIPLE OF MINIMUM TOTAL ENERGY SUBJECTED TO A STRESS CONDITION</i> Karthik Ambikakumari Sanalkumar; Vladislav Mantic; Marco Paggi		
11:40-12:00	<i>Analysis of Delamination Growth in Three-Point Bending Test: Influence of Friction Coefficient and Elastic Moduli Mismatch</i> Maria de los Angeles Herrera Garrido; Dominique Leguillon; Vladislav Mantic		
12:00-12:20	<i>Crack impinging on a curved weak interface: Penetration or deflection?</i> Maria Teresa Aranda Romero		
12:20-12:40	<i>A Finite Fracture Mechanics model to predict free edge delamination in angle ply laminates</i> Giuseppe CATALANOTTI; Mohammad Burhan; Tommaso Scalici; Zahur Ullah; Zafer Kazanci		
12:40-13:40	<i>Lunch break</i>		Room: Coffee Lounge
13:40-16:00	Failure Analysis Symposium 1	Chair: Camilla Zolesi	Room: B001
13:40-14:00	<i>Quasi-static failure and energy absorption of mechanically-fastened UD carbon-fibre thermoplastic composite joints</i> Pedro Silva Campos; Denis Dallí; Igor Rodrigues Lopes; Albertino Arteiro		
14:00-14:20	<i>Material Parameter Sensitivity Analysis for Intralaminar Damage of Laminated Composites through Direct Differentiation</i> Paolo Minigher; Albertino Arteiro; Albert Turon; Pedro P. Camanho		
14:20-14:40	<i>Effect of the choice of printing parameters on the fracture properties of 3D printed composites</i> Simone Sangaletti		
14:40-15:00	<i>A new crack-tip element for the logarithmic stress-singularity of Mode-III cracks in spring interfaces</i> Luis Tavara; Vladislav Mantic; Alberto Vazquez-Sanchez; Manuel Romero-Laborda; Mar Muñoz-Reja; Sara Jimenez-Alfaro		
15:00-15:20	<i>Identification of mode I fracture toughness in GFRP/Al and GFRP/Cu joints for structural batteries</i> Maryam Niazi; Federico Danzi; Ricardo Carbas; Pedro Camanho		
15:20-15:40	<i>Predicting compression strength and design allowables of composite laminates after impact: A machine learning methodology</i> Guijia Zhang		
15:40-16:00	<i>Machine Learning-Accelerated Predictions of Design Allowable of Composite Laminates</i> Carolina Furtado; Luis Rodrigues; Igor Lopes; João Esteves; Federico Danzi; Gerard Guillaumet		
16:00-16:20	<i>Coffee break</i>		Room: Coffee Lounge
16:20-17:20	Plenary Lecture 2 <i>Exploring Deformation and Fracture in Transformation-Induced Plasticity Alloys: A Multiscale Modeling Approach</i> Francisco M. Andrade Pires, Miguel V. Carvalho, Rui P. C. Coelho, Igor A. Rodrigues Lopes	Chair: Marco Paggi	Room: B001

09-May	Thursday		
09:00-10:00	Plenary Lecture 3 <i>Multiscale simulation of fracture and fatigue in composites with data-driven acceleration</i> Frans van der Meer	Chair: Jose Antonio Reinoso Cuevas	Room: B001
10:00-10:20	Coffee break		Room: Coffee Lounge
10:20-12:40	Phase Field models for fracture Symposium 1	Chair: Karthik Ambikakumari Sanalkumar	Room: B001
10:20-10:40	<i>Cortical bone fracture toughness and ultimate stress/strain</i> Maxime Levy; Zohar Yosibash		
10:40-11:00	<i>Stability and crack nucleation in variational phase-field models of fracture: effect of length-scales and multi-axiality</i> Camilla Zolesi; Corrado Maurini		
11:00-11:20	<i>Quasi-static versus dynamic Phase Field fracture models for unstable crack propagations</i> Arturo Chao Correias; Jose Antonio Reinoso Cuevas; Pietro Cornetti; Mauro Corrado		
11:20-11:40	<i>A computational model of interface and phase-field damage for multi-domain solids exposed to dynamic loading</i> Roman Vodicka		
11:40-12:00	<i>Modeling interface fracture using phase field method: A study on numerical implementation and model parameters</i> Anupama Surendran; Chandra Kishen JM		
12:00-12:20	<i>Phase-field damage models via homogenization</i> Gerard Villalta; Alex Ferrer; Fermin Otero		
12:20-12:40	<i>ON THE ENERGY DECOMPOSITION IN VARIATIONAL PHASE-FIELD MODELS FOR BRITTLE FRACTURE UNDER MULTI-AXIAL STRESS STATES</i> Francesco Vicentini; Camilla Zolesi; Pietro Carrara; Corrado Maurini; Laura De Lorenzis		
12:40-13:40	Lunch break		Room: Coffee Lounge
13:40-14:40	Phase Field models for fracture Symposium 2	Chair: Angela Maria Fajardo Lacave	Room: B001
13:40-14:00	<i>Application of generic path-following methods to phase-field fracture simulation</i> Flavien Loiseau; Lazarus Véronique		
14:00-14:20	<i>A phase-field model for contact-induced fracture of quasi-brittle materials</i> Marco Paggi		
14:20-14:40	<i>Seawater Immersion and its Effect on the Fatigue Behaviour of Glass/Epoxy laminates</i> Hugo Vidinha		
14:40-16:00	Failure Analysis Symposium 2	Chair: Simone Sangaletti	Room: B001
14:40-15:00	<i>The Atomistic Origin of Fracture Toughness</i> Gergely Molnar		
15:00-15:20	<i>Off-axis strength and failure of notched thin-ply laminates</i> Anatoli Mitrou; Albertino Arteiro; Jose Reinoso; Pedro P. Camanho		
15:20-15:40	<i>LOCKING TREATMENT OF PENALTY-BASED GRADIENT-ENHANCED DAMAGE FORMULATION FOR FAILURE OF COMPRESSIBLE AND NEARLY INCOMPRESSIBLE HYPERELASTIC MATERIALS</i> Angel de Jesus Valverde Gonzalez; José Antonio Reinoso Cuevas; Berkin Dortdivanlioglu; Marco Paggi		
15:40-16:00	<i>Different strategies for dealing with locking phenomena using elastoplastic models</i> Pablo Olivares Rodriguez; Adrià Quintanas Corominas; Israel Garcia Garcia; José Antonio Reinoso Cuevas; Emilio Martínez Pañeda		
16:00-16:20	Coffee break		Room: Coffee Lounge
16:20-17:20	Failure Analysis Symposium 3	Chair: Francesco Vicentini	Room: B001
16:20-16:40	<i>Computational modeling of progressive high-cycle fatigue in composite laminates</i> Pieter Hofman; Frans P. Van der Meer; Lambertus J. Sluys		
16:40-17:00	<i>Damage evolution modelling of fibre-reinforced polymer composites using a smeared crack approach</i> Paulo Teixeira Goncalves; Albertino Arteiro; Fermin Otero		
17:00-17:20	<i>Influence of the failure criteria on the failure strength prediction of filled-hole compressive tests using carbon fibre reinforced polymer laminates</i> Ivan R. Cózar; José M. Guerrero; Pere Maimí; Albertino Arteiro; Santiago García-Rodríguez; Mélanie Herman; Albert Turon; Fermin Otero		
Conference Banquet			

10-May	Friday		
09:00-10:00	Plenary Lecture 4 <i>Can machine learning help computational fracture mechanics?</i> Laura De Lorenzis	Chair: Arturo Chao Correas	Room: B001
10:00-10:20	Coffee break		Room: Coffee Lounge
10:20-12:40	Finite Fracture Mechanics Symposium 2	Chair: Amir Mohammad Mirzaei	Room: B001
10:20-10:40	<i>Analysis of unfolding failure using Finite Fracture Mechanics</i> Sindhu Bushpalli; Pietro Cornetti; Enrique Graciani; Bernardo López-Romano		
10:40-11:00	<i>Crack onset in stretched open hole PMMA plates considering linear viscoelastic behaviour</i> Afonso Leite; Vladislav Mantic; Federico Paris		
11:00-11:20	<i>Predicting transverse cracking and delamination in composites. Applications of the coupled criterion of the finite fracture mechanics</i> Israel Garcia; Vladislav Mantic		
11:20-11:40	<i>Multi-fibre Failure Prediction using the Principle of Minimum Total Energy subjected to a Stress Condition (PMTE-SC)</i> José Miguel Pimentel; Mar Muñoz-Reja; Luis Távora; Vladislav Mantic		
11:40-12:00	<i>Study of geometrical nonlinearity in composite single-lap joints by means of the principle of minimum total energy subjected to a stress condition</i> José Luis Guzmán; Mar Muñoz-Reja; Luis Távora; Vladislav Mantic		
12:00-12:20	<i>Experimental and numerical investigation of the crack velocity at the initiation of an abrupt crack propagation in a V-notch under bending: a coupled criterion analysis</i> Rafael Estevez; Thomas Duminy; Aurélien Doitrand; Anthony Gravouil; Gergely Molnar		
12:20-12:40	<i>Detection of the defect or process zone at the tip of the V-notch from DIC combined with the coupled criterion and the generalized stress intensity factor: experimental and numerical analysis</i> Duminy Thomas; Doitrand Aurélien; Estevez Rafael; Molnar Gergely		
12:40-13:40	Lunch break		Room: Coffee Lounge
13:40-15:00	Failure Analysis Symposium 4	Chair: Sindhu Bushpalli	Room: B001
13:40-14:00	<i>A novel analytical tool for rapid laminate design of crash structures</i> Denis Dalli; Pedro Cunha; Diogo Mateus; Teresa Duarte; Albertino Arteiro		
14:00-14:20	<i>Fast Estimation of interlaminar Fracture Properties and Shear Hardening Behavior in Fiber-Reinforced Composites</i> Erdem Dinler; Igor A. Rodrigues Lopes; Carolina Furtado; Pedro P. Camanho		
14:20-14:40	<i>Bearing/Pull-through Failure Envelope of Composite Joints: Novel Experimental Setup and Numerical Validation</i> Anna Volpi; Carolina Furtado; Ricardo Fernandes Pinto; Federico Danzi; Giuseppe Catalanotti; Francisco Queirós de Melo; Pedro Ponces Camanho		
14:40-15:00	<i>Modification of nominal strength scaling laws taking pseudo-ductility into consideration</i> Anbazhagan Subramani; Pere Maimi Vert; Josep Costa Balanzat		
15:00-16:00	Closing session <i>Acknowledgements; Best student presentation award; Future perspectives; Farewell</i> Vladislav Mantič (NewFrac Coordinator); Pedro P. Camanho (Organizing Committee)	Chair: Albertino Arteiro	Room: B001