

CFRAC 2017

International Conference on Computational Fracture
and Failure of Materials and Structures

TECHNICAL PROGRAM



14-16 June 2017 – Nantes (France)

Mini Symposia

MS1: Theory of fracture, crack propagation criteria, and crack tracking algorithm

Anna Pandolfi & Michael Ortiz

MS2: Regularized failure models

Milan Jirásek, Blaise Bourdin & Nicolas Moës

MS3: Ductile fracture, modeling of shear bands and necking

Pierre-Olivier Bouchard, José César de Sá & Ron Peerlings

MS4: Advances in the Experiment-Modeling Dialog

Julien Réthoré, Stephen A. Hall & Stéphane Roux

MS5: Dynamic fracture, fragmentation and impact

Alain Combescure & Joško Ožbolt

MS6: Fracture of Polymers

Erwan Verron, Michael Kaliske & Eric van der Giessen

MS7: Modelling and simulation of damage and fracture induced by repeated contacts

Marco Paggi, Anthony Gravouil & David Hills

MS8: Enriched finite-element formulations for fracture

Jorge Alfaiate, Lambertus J. Sluys & Daniel Dias-da-Costa

MS9: Statistical aspects of fracture

Laurent Ponson, Daniel Bonamy & Jean-François Molinari

MS10: Multi-scale analysis

Stephan Löhnert, Marc Geers, Alfredo E. Huespe & Javier Oliver

MS11: Fracture and damage of composites and laminates

Pedro P. Camanho, Stephen Hallett, Joris J. C. Remmers & Olivier Allix

MS12: Quasi-brittle cracking in Concrete and Rock, including durability mechanics, coupled processes and hydraulic fracture

Gilles Pijaudier-Cabot, Ignacio Carol & Kaspar William

Benchmark CARPIUC : Crack Advance, Reorientation, Propagation and Initiation Under Complex loadings

Andreea Carpiuc, Martin Poncelet, Julien Réthoré & Stéphane Roux

Program Overview – Wednesday, June 14th 2017

8:30 - 9:30	Mezzanine Registration & Coffee					
9:30 - 10:00	Auditorium 450 Opening <i>Introduction to CFRAC 2017</i> , Nicolas MOËS, Xavier OLIVER, Milan JIRÁSEK, Olivier ALLIX					
10:00 - 10:45	Auditorium 450 Plenary Lecture <i>Multi-scale modelling of quasi-brittle fracture processes</i> , Lambertus J. SLUYS					
10:45 - 12:45	Audit. 450 MS2	Room 200 MS4	Room GH MS12	Room I MS10	Room KL MS3	Room J MS5
12:45 - 14:00	Area R2 Lunch					
14:00 - 16:00	Audit. 450 MS2	Room 200 MS4	Room GH MS12	Room I MS10	Room KL MS3	Room J MS5
16:00 - 16:30	Coffee Break					
16:30 - 18:30	Audit. 450 MS2	Room 200 MS1	Room GH MS12	Room I MS10	Room KL MS3	Room J MS9
18:30 - 19:30	Mezzanine Welcome Drink					

Lectures: Wednesday, June 14th 2017 – Morning

	Auditorium 450	Room 200	Room GH	Room I	Room KL	Room J
Chair.	MS2 Milan Jirásek	MS4 Julien Réthoré	MS12 Gilles Pijaudier-Cabot	MS10 Javier Oliver	MS3 Pierre-Olivier Bouchard	MS5 Alain Combescure & Joško Ožbolt
10:45	<i>Combining cohesive and diffuse modeling of crack growth with the thick level set approach to fracture</i>, N. Moës, B. Lé, G. Legrain <i>Analysis of the failure at notches and cavities in quasi-brittle media using the TLS damage model and comparison with the coupled criterion</i>, J. Zghal, N. Moës, K. Moreau, D. Leguillon, C. Stolz <i>Micromechanics-based non-local damage theory: Application to the prediction of localization and precursor statistics</i>, E. Berthier, V. Démery, L. Ponson <i>Nonlocal Models with Damage-Dependent Interaction Distance: Role of Permanent Strains</i>, M. Jirásek, R. Desmorat <i>Nonlocal damage formulation with evolving internal length: the Eikonal nonlocal approach</i>, G. Rastello, C. Giry, F. Gatuingt, R. Desmorat	<i>A crack path tracking algorithm for digital image correlation results</i>, S. Feld-Payet, G. Le Besnerais, V. Bonnard <i>Identification of adhesive layers cohesive properties using a Timoshenko beam model with contact coupled with a CZM</i>, M. Azab, G. Parry, M. Braccini, R. Estevez <i>On the Authority of Experiment Versus Model in Full-Field Damage Identification</i>, J. Neggers, S. Roux, F. Hild, N. Swiergiel <i>Dynamic brittle fracture by XFEM and gradient-enhanced damage</i>, M. Pezeshki, S. Loehnert, P.-A. Guidault, E. Baranger, P. Wriggers <i>Half-minute lab tomography of an in situ fracture test</i>, C. Jallin, A. Bouterf, M. Poncelet, S. Roux <i>Computational modeling of mixed-mode fracture of cement mortar with full-field displacement boundary conditions: A phase-field approach</i>, T. Wu, A. Carpiuc-Prisacari, M. Poncelet, L. De Lorenzis	<i>Numerical and experimental investigation of size effect in concrete by the scaling of microstructure</i>, R. Zhu, S. Y. Alam, A. Loukili <i>Influence of concrete meso-structure on the interaction between damage and non-elastic deformation of cement paste: 3D FE study</i>, G. Serena, J. Ožbolt, J. Hofmann <i>Statistical organization of acoustic events induced by the slow propagation of a single crack in a heterogeneous solid</i>, D. Bonamy, J. Barés, A. Dubois, M. L. Hattali, D. Dalmás <i>A Consistent Multiscale Approach for Multiphysical Failure Processes in Poroplastic Materials like Concrete</i>, F. Lopez Rivarola, N. Labanda, G. Etse <i>Multi-scale modeling of the fracture and creep behaviors of recycled aggregate concrete</i>, M. Guo, F. Grondin, A. Loukili <i>A micro-macro model for the damage prediction of concrete based on the hydration process</i>, A. Rhardane, F. Grondin, S.-Y. Alam	<i>On the FE-Meshless computational homogenization for the analysis of two-dimensional heterogeneous periodic materials</i>, G. Giambanco, E. La Malfa Ribolla, A. Spada <i>General imperfect interface models at finite deformation and their influence on the macroscopic material response</i>, T. Heitbreder, N. Saabye Ottosen, M. Ristinmaa, J. Mosler <i>An Enriched Quasi-Continuum Approach to Crack Propagation in Discrete Lattices</i>, O. Rokoš, R. H. J. Peerlings, J. Zeman, L. A. A. Beex <i>Quasicontinuum simulation of crack propagation in elastic-brittle disordered lattices</i>, K. Mikeš, M. Jirásek <i>A naval application of crack propagation in residual stress fields</i>, H. Minnebo, B. Leblé, A. Ezanno, P. Hamel <i>A multiscale analysis of fracture in Magnesium alloys</i>, J. Herrington, B. Kondori, A. Benzerga	<i>On the Competition between Shear Bands and Failure by Void Coalescence</i>, N. Thomas, M. Torki, A. Benzerga (Keynote) <i>Modeling of Intermittent Shear Bands and Ductile Fracture of a Thin Aluminum CT Specimen</i>, G. Rousselier, S. Ren, T. Morgeneyer, S. Forest, M. Mazière <i>Deformation and fracture of lath martensite: brittle or ductile?</i>, M. G. D. Geers, C. Du, F. Maresca, V. G. Kouznetsova, J. Hoefnagels, W. A. Curtin <i>Application of a Modified GTN Model to Predict Large Deformation Failure of Pressure Vessels</i>, D. Orrin-Seemann <i>Fracture in multi-phase materials: why some microstructures are more critical than others</i>, T. W. J. de Geus, R. H. J. Peerlings, M. G. D. Geers	<i>Failure analysis of quasi-periodic lattices</i>, A. Glacet, J. Réthoré, A. Tanguy <i>Quantifying Macro-Descriptors of Dynamic Fragmentation with Thick Level-Set Method Approach</i>, A. Stershic, J. Dolbow, N. Moës <i>Dynamic Fracture of CT Concrete Specimens Exposed to High Temperature: Numerical and Experimental Study</i>, J. Ožbolt, D. Ruta <i>Modelling Mixed Mode Fracture of Concrete under Dynamic Loading</i>, A. Sharma, J. Bošnjak, J. Ožbolt <i>Mesoscale modeling of dynamic fracture in quartzite and sandstone and homogenization to macroscale</i>, N. Durr, M. Sauer, S. Hiermaier <i>High-velocity crack speed in wood fibre composites: an experimental and numerical study</i>, J. Carlsson, P. Isaksson
12:45						

Lectures: Wednesday, June 14th 2017 – Afternoon

	Auditorium 450	Room 200	Room GH	Room I	Room KL	Room J
Chair.	MS2 Blaise Bourdin	MS4 Stéphane Roux	MS12 Giovanna Xotta	MS10 Marc Geers	MS3 Ron Peerlings	MS5 Alain Combescure & Joško Ožbolt
14:00	<i>Variational gradient damage models: how to deal with realistic damage surfaces and stiffness recovery effects</i>, E. Lorentz <i>Gradient damage models in large deformation</i>, B. Crabbé, J.-J. Marigo, E. Chamberland, J. Guilié <i>A two-stage algorithm for solving quasi-brittle fracture problems</i>, P. Areias, J. César de Sá <i>On some approaches of graded damage modelling</i>, C. Stolz <i>A Strain Gradient Approach for Modeling of Quasi-Brittle Damage Responses</i>, F. Putar, J. Sorić, T. Lesičar, Z. Tonković <i>Lattice and nonlocal approaches for Discrete Damage Mechanics structural problems</i>, B. Hérissou, N. Challamel, V. Picandet, A. Perrot	<i>Experimental failure surfaces and their theoretical predictions for a plastic bonded explosive and its simulant</i>, M. Chatti, M. Gratton, A. Frachon, M. Caliez, N. Aithocine <i>Experimental investigations about the origins of the anisotropic behavior in mechanical loadings of extruded AA2017 aluminum alloy</i>, A. May <i>Effect of Lode Angle and Stress Triaxiality on Steel Behaviour: Experimental and Numerical Investigations</i>, F. De Simoi, R. Mousavi, G. Xotta, K. Willam <i>Experimental and theoretical investigation on the influence of ageing materials on functional fatigue of Shape-Memory ESTANE</i>, E. Ghobadi, H. Steeb <i>Experimental and Computational Analysis of Pressure Reducer Failure</i>, G. Vukelic, J. Brnic <i>Temperature control of dumbbell specimens exposed to cyclic loading - experimental foundation of the investigation of the dissipated energy as an end-of-life predictor</i>, O. Gehrmann, M. Krause, N. Kröger, D. Juhre	<i>Modelling Bond between Reinforcement and Concrete after Exposure to Fire</i>, J. Bošnjak, A. Sharma, J. Ožbolt <i>Explicit modelling of cracking induced by drying shrinkage</i>, C. Oliver-Leblond, F. Soleilhet, F. Benboudjema <i>A multi-fiber Timoshenko beam finite element with embedded discontinuities to simulate the behaviour of reinforced concrete structures till failure</i>, I. Bitar, P. Kotronis, N. Benkemoun, S. Grange <i>A Thick Level Set approach for the numerical Simulation of restrained shrinkage cracking in concrete structures</i>, R. Nakhoul, O. Pierard <i>Numerical Strategy for Developing a Probabilistic Model for Elements of Reinforced Concrete</i>, P. Rossi, C. Nader, J.-L. Tailhan <i>Fracture Behaviors of Recycled Aggregate Concrete Beams under Different Loading Rates</i>, K. Musiket, F. Vernerey, Y. Xi	<i>High performance model order reduction techniques in computational multiscale fracture</i>, J. Oliver, M. Caicedo, A. E. Huespe, O. Lloberas-Valls <i>A multiscale model for fracturing solids</i>, E. Svenning, F. Larsson, M. Fagerström <i>On the potential of multiscale simulations for the virtual testing of carbon composites</i>, M. Vinot, N. Toso-Pentecôte, M. Holzapfel <i>Bottom-up Multiscale Approach on Transverse Cracking of Cross-ply Laminates</i>, M. Herraiez, C. Gonzalez, C. S. Lopes <i>Multispatial/multitemporal homogenisation analysis of hygrothermal fatigue in glass/epoxy composites</i>, I. B. C. M. Rocha, F. P. van der Meer, R. P. L. Nijssen, L. J. Sluys <i>A two-field multiscale computational homogenization method for failure modeling of microstructured materials</i>, V. D. Nguyen, L. Noels	<i>Phase Field Modeling of Ductile Fracture in Soil Mechanics</i>, D. Kienle, F. Aldakheel, M.-A. Keip <i>Phase field and gradient damage models in ductile failure</i>, E. Azinpour, J. César de Sá, A. D. Santos <i>A phase-field model for hydrogen-assisted fracture in elastic-plastic solids</i>, F. P. Dupa, A. Ciarbonetti, S. Toro, A. E. Huespe <i>Development of modified-Rousselier model for creep damage problems in eXtended finite element method (XFEM) approach</i>, M. I. M. Ahmad, J.L. Curiel Sosa, J. A. Rongong <i>Application of uncoupled damage models to predict ductile fracture in sheet metal blanking</i>, C. Canales, R. Boman, J.-P. Ponthot	<i>Computational study for dynamic crack propagation in pressure vessel wall with hydrogen leakage using coupled particle and Euler method</i>, J. Ishimoto, T. Sato, A. Combescure <i>The Discrete Element Method for the estimation of the critical dynamic energy release rate: application on spherical structures</i>, A. Coré, J.-B. Kopp, J. Girardot, P. Viot <i>Numerical Modelling of Structural Degradation under Adiabatic Shear Banding and Micro-voiding</i>, H.-L. Dorothy, P. Longère <i>Dynamic fracture simulations through strain injection techniques</i>, O. Lloberas-Valls, A. E. Huespe, J. Oliver, I. F. Dias <i>A numerical study on crack branching in quasi-brittle materials</i>, L. F. Pereira, J. Weerheijm, L. J. Sluys <i>Dynamic fracture and fragmentation of Ice: an SPH modeling</i>, A. Combescure, K. Soobaarayan, P. Deconninck, P. Hereil
16:00						

Lectures: Wednesday, June 14th 2017 – End of afternoon

	Auditorium 450	Room 200	Room GH	Room I	Room KL	Room J
Chair.	MS2 Nicolas Moës	MS1 Michael Kaliske	MS12 Gilles Pijaudier-Cabot & Giovanna Xotta	MS10 Stephan Löhnert	MS3 José César de Sá	MS9 Jean-François Molinari
16:30	<i>Recent outcomes on the fracture propagation in brittle materials as a standard dissipative process.</i>, A. Salvadori <i>An attempt to use bounded rate damage models for mesh independent simulation of quasi static failure in explicit dynamics by using scaling techniques</i>, O. Allix, D. Lindner, O. Paulien-Camy <i>A viscous regularized damage growth model representing ductile fracture</i>, S. Razanica, R. Larsson, B. L. Josefson <i>Microbranching instability using a variational phase-field model</i>, J. Bleyer, J.-F. Molinari <i>A homogenized localizing gradient damage model with micro inertia effect</i>, L. H. Poh, W. Zhao	Dynamic Fracture in Quasi-brittle Materials with Random Defects, R. Haber, R. Abedi, P. Clarke, A. Madhukar (Keynote) <i>An Adaptive Mesh-Free Approach for Dynamic Failure Analysis</i>, A. Shojaei, M. Zaccariotto, U. Galvanetto <i>Dynamic Crack Propagation Analysis based on Particle Discretization Scheme Finite Element Method (PDS-FEM)</i>, K. Oguni, S. Noso <i>A Continuum Description of Failure Waves</i>, H. Said, J. Glimm <i>On the stability of straight crack paths in brittle heterogeneous solids under mode I loading</i>, M. Abdulmajid, L. Ponson	<i>3D DEM analysis of damage and failure in cohesive granular materials</i>, Y. L. Zhang, J.-F. Shao <i>Lattice analysis of hydraulic fracturing in the presence of joints</i>, V. Lefort, O. Nouaillietas, D. Grégoire, G. Pijaudier-Cabot <i>Simulation at the meso-scale of the crack induced permeability in concrete, estimate of the non linear evolution of the flow coefficient</i>, C. La Borderie, M. Matallah <i>Numerical Analysis for the Propagation Process of Diffusion-induced Cracks</i>, S. Hirobe, K. Oguni <i>A coupled model for simultaneous damage, healing and capillary flow in cementitious materials</i>, A. D. Jefferson, R. E. Davies	<i>A multiscale plastic damage model with associated flow rule for brittle geomaterials</i>, L. Y. Zhao, Q. Z. Zhu, J.-F. Shao <i>A Hybrid Nonlinear Multi-Scale Analysis of Reinforced Concrete Structures</i>, C. Paniagua, G. Ayala, J. Retama <i>An adaptive concurrent multiscale model for concrete</i>, E. A. Rodrigues, O. L. Manzoli, L. A. G. Bitencourt Jr., T. N. Bittencourt <i>Two-scale modeling of microscopically based failure processes at early stage of damage of ferritic ductile iron</i>, D. O. Ferdinando, S. Toro, P. J. Sanchez, A. P. Cisilino <i>A Multiscale Approach with Application to Phase-Field Modeling of Fracture</i>, N. Noii, T. Gerasimov, L. De Lorenzis, O. Allix <i>Multiscale Phase field modeling of brittle cracking in heterogeneous materials</i>, N. Nguyen, J. Yvonnet	<i>Numerical investigation of ductile damage in flexible forming process of aluminium sheet metals</i>, S. Koubaa, L. Belhassen, M. Wali, F. Dammak <i>New biaxial specimens for the characterization of damage and failure in ductile sheet metals</i>, S. Gerke, M. Schmidt, M. Brünig <i>Simulation of ductile damage failure of butterfly specimen</i>, L. Siad, B. Abbas, S. C. Gangloff <i>Cohesive Band Model: a triaxiality-dependent cohesive model inside an implicit non-local damage to crack transition framework</i>, J. Leclerc, L. Wu, V. D. Nguyen, L. Noels <i>Application of the Configurational Force Concept in Modelling of Ductile Fracture and Materials Design</i>, O. Kolednik, W. Ochensberger, M. Sistaninia, R. Kasberger	Dependence of Transverse Failure of Composites on Statistics of Fiber/Matrix Interface Properties, P. Geubelle, M. Shakiba, S. Zacek, D. Brandyberry (Keynote) <i>Out-of-plane crack propagation in heterogeneous materials under pure mode I loading</i>, M. Lebihain, J.-B. Leblond, L. Ponson <i>Dynamic Fracture in Heterogeneous Material, The Influence of Elastic Wave Field and Geometry of the Sample</i>, A. Dudois, D. Bonamy <i>On the dynamic perturbation of crack front by micro-scale material heterogeneities</i>, F. Barras, P. H. Geubelle, J.-F. Molinari
18:30						

Program Overview – Thursday, June 15th 2017

8:45 - 9:30	Auditorium 450 Plenary Lecture <i>Phase-field and variational models of fracture: twenty years and counting</i> , Blaise A. BOURDIN					
9:30 - 10:15	Auditorium 450 Plenary Lecture <i>The role of numerical tools on the development of a new generation of polymer composite materials</i> , Pedro CAMANHO					
10:15 - 10:45	Coffee Break					
10:45 - 12:45	Audit. 450 MS2	Room 200 MS1	Room GH MS12	Room I MS8	Room KL MS11	Room J MS9
12:45 - 14:00	Area R2 Lunch					
14:00 - 16:00	Audit. 450 MS2	Room 200 MS1	Room GH MS12	Room I MS8	Room KL MS11	Room J MS6
16:00 - 16:30	Coffee Break					
16:30 - 18:30	Audit. 450 MS2	Room 200 MS1	Room GH Benchmark	Room I MS8	Room KL MS11	Room J MS6
19:00 - ...	Mezzanine & Area R2 Cocktail & Banquet					

Lectures: Thursday, June 15th 2017 – Morning

	Auditorium 450	Room 200	Room GH	Room I	Room KL	Room J
Chair.	MS2 Nicolas Moës	MS1 Günther Meschke	MS12 Ignacio Carol & Giovanna Xotta	MS8 Lambertus J. Sluys	MS11 Joris Remmers	MS9 Daniel Bonamy
10:45	Initiation, nucleation, and influence of defects in variational phase-field models of brittle fracture, C. Maurini, B. Bourdin, T. Li, J.-J. Marigo, E. Tanné (Keynote) Gamma - convergence in phase-field models for brittle fracture, T. Linse, P. Hennig, M. Kästner, R. de Borst Newton methods and adaptivity for the fully monolithic solution of phase-field fracture, T. Wick Broadening of damage in gradient models and phase-field models, A. Rodríguez-Ferran, A. Simone, B. Vandoren, J. Dolbow Analysis of Hertzian indentation fracture using a phase field method, M. Strobl, Th. Seelig	FEM-simulation of anisotropic crack growth in a nickel-base alloy under thermomechanical fatigue, M. Kuna, C. Ludwig, F. Rabold, M. Schurig, H. Schlums Improvements in the accuracy of the method theta for the calculation of the stress intensity factors in 3D, M. Le Cren, A. Martin, P. Massin, N. Moës A Mixed Finite Element Formulation for Strain-Gradient Isotropic Materials, M. Brunetti, G. Sciarra, S. Vidoli Unified criteria for fatigue endurance modelling under combined loading, B. Bholah, Y. Guilhem, J. Jaravel, S. Pommier A 3D meso-scale approach to concrete fracture based on DEM and X-ray micro CT images, M. Nitka, J. Teichman 3D simulations of crack growth in concrete with cohesive elements at mesoscale level, W. Trawiński, J. Teichman, J. Bobiński	Hydraulic Fracture Propagation in Inhomogeneous Poroelastic Medium, A. N. Baykin, S. V. Golovin Hydraulic fracture interaction in multi-stage fracturing analysis using zero-thickness interface elements, I. Carol, D. Garolera, J. M. Segura, M.R. Lakshmikantha, J. Alvarellos Finite element modelling of permeability: from diffuse micro-cracking to localized crack opening, S. Rahal, A. Sellier, J. Verdier Numerical modelling of hydraulic fracturing in anisotropic sedimentary rocks, C. Yao, J.-F. Shao, Q.H. Jiang, C. B. Zhou Estimation of structural permeability through the Thick Level Set method and anisotropic mesh adaptation, G. Legrain, B. Lé, C. Sarkis, N. Moës Modelling of intersection between hydraulic and natural fractures using the eXtended Finite Element Method, F. Cruz, D. Roehl, E. Vargas	Damage coupled with elastoplasticity - robustness and stability issues of a special finite element technology, S. Reese, T. Brepols, S. Wulfinghoff Multiscale Analysis and Material Sensitivity of Failure in Heterogeneous Materials Using an Interface-Enriched Generalized FEM, D. Brandyberry, P. Geubelle Phase field approach to brittle fracture for functionally graded materials, P. Lenarda, M. Paggi A phase field approach for modeling damage using natural neighbour Galerkin method, K. Preethi, A. Rajagopal, F. Aldakheel, M.-A. Keip	Analysis of Rate-Dependent Delamination Described by Delayed Damage Model with Bounded Rate, M. Jirásek, O. Allix Delamination modeling at the inter-ply scale in unidirectional composite laminates, E. Baranger, F. Daghia Geometrically nonlinear beam finite elements for modelling the mixed-mode rate-dependent delamination in layered structures, L. Škec, G. Alfano, G. Jelenic Adaptive modelling of delamination growth using isogeometric continuum shell elements, M. Fagerström, J. J. C. Remmers A new mixed-mode cohesive delamination model with internal friction, F. Confalonieri, U. Perego	Linear (in)stability analysis prediction of the fault angle in damage models, V. Démary, V. Dansereau, E. Berthier, J. Weiss, L. Ponson (Keynote) Statistical size effects on the mechanical behavior of concrete under uniaxial compression, C.-C. Vu, J. Weiss, O. Plé, D. Amtrano Crack-Crack Interaction in Linear Elastic Fracture Mechanics, M.-E. Schwaab, T. Biben, S. Santucci, A. Gravouil, L. Vanel Triangular Fracture patterns reveal the nature of slip to stick transition in polymeric materials, A. Vasudevan, T. Melo Graboïs, L. Ponson Depinning dynamics of a crack front from a designed obstacle, J. Chopin, A. Baskhar, L. Ponson
12:45						

Lectures: Thursday, June 15th 2017 – Afternoon

	Auditorium 450	Room 200	Room GH	Room I	Room KL	Room J
Chair.	MS2 Blaise Bourdin	MS1 Robert Haber	MS12 Ignacio Carol	MS8 Stephanie Reese	MS11 Olivier Allix	MS6 Erwan Verron
14:00	<i>Simulation of the ductile rupture of a low carbon construction steel using a regularized locking-free GTN model, Y. Zhang, E. Lorentz, J. Besson</i> <i>Gradient-damage / plasticity variational models for cohesive and ductile fracture, E. Tanné, R. Alessi, B. Bourdin, J.-J. Marigo</i> <i>A micromorphic damage-plasticity model and its application in mesh-objective finite element simulations, T. Brepols, S. Wulfinghoff, S. Reese</i> <i>Towards a mesh-objective description of anisotropic damage with crack-closure by means of a micromorphic formulation, M. Fassin, S. Wulfinghoff, S. Reese</i>	<i>Geometrical and numerical aspect of the Thick Level Set (TLS) Damage and fracture model, N. Chevaugeon, N. Moës, A. Salzman</i> <i>On performance of the Thick Level Set method in 3D quasi-static fracture simulation of quasi-brittle material, A. Salzman, N. Chevaugeon, N. Moës, G. Legrain</i> <i>Mapped Finite Element Methods: higher order methods for simulating curvilinear crack propagation, M. Chiaramonte</i> <i>How to equip the Finite Element Method with the capability to simulate realistic crack patterns, M. Zaccariotto, D. Tomasi, U. Galvanetto</i> <i>Mixed FE solution of the layerwise model M4-5n with emphasis on embedded discontinuities, O. Chupin, H. Nasser, J.-M. Piau, A. Chabot</i> <i>Prediction of failure of a V-notched unidirectional composite using the coupled criterion, D. Leguillon, Z. Yosibash, J. Bortman</i>	<i>Modelling of Erosion based on the concepts of Mixture theory and Continuum Damage Mechanics, T. A. Bui, R. Gelet, D. Marot</i> <i>Modeling the growth of planar 3D hydraulic fractures in the presence of in-situ stress contrast, B. Lecampion, H. Zia</i> <i>Phase field modeling of hydraulic fracturing with interfacial damage in highly heterogeneous fluid-saturated porous media, J. Yvonnet, L. Xia, S. Ghabezloo</i> <i>The Influence of Pore Pressure on Formation Stability after Hydraulic Fracturing, E. Sarris, T. Cheimonas, E. Gravanis</i>	<i>An Efficient Parallel Implementation of the Enhanced Local Pressure Model for the Simulation of Hydraulic Fracturing, E. W. Remij, J. J. C. Remmers, F.J. Lingen, J. M. Huyghe, D. M. J. Smeulders</i> <i>A simplified hydraulic fracturing model in 3D with prescribed pressure profiles, M. Schätzer, T.-P. Fries</i> <i>3D crack propagation within the polycrystalline microstructure of dual phase steels during forming processes, S. Loehnert, S. Beese, P. Wriggers</i> <i>Crack propagation using XFEM coupled with Adaptive Mesh Refinement, G. Gibert, B. Prabel, A. Gravouil, C. Jacquemoud</i> <i>Error-based mesh adaptation during crack propagation simulation with X-FEM, O. Pierard, Y. Jin, S. Bordas</i>	Modelling the failure mechanisms in z-pin reinforced composite laminates, A. R. Melro, I. K. Partridge, S. R. Hallett (Keynote) <i>Modeling of facesheet to core delamination of sandwich panels exhibiting severe fiber bridging by means of cohesive zone models, D. Hoewer, B. A. Lerch, B. A. Bednarczyk, E. J. Pineda, S. Reese, J.-W. Simon</i> <i>A continuum damage model for delamination and intralaminar damage in composite laminates, J.-W. Simon, D. Höwer, S. Reese, J. Fish</i> <i>Progressive Failure Analysis of Stiffened Composite Panels with Skin-Stringer Debonding and Intralaminar Damage using a Two-Way Loose Coupling Approach, M. Akterskaia, E. Jansen, S. Hühne, R. Rolfes</i> <i>Extension of a level set model to the numerical modeling of multifront delamination problems for composite laminates, P. Rozycki, E. Picault</i>	<i>Fracture Analysis of Polymers by the Phase-Field Method, B. Yin, M. Kaliske</i> <i>Multiscale modeling of fracture in thermoplastic PC/ABS blends, J. Hund, Th. Seelig</i> <i>Unified Modelling Concept for Increasing or Non-Monotonic Fracture Energy vs. Crack Speed Relationships: Physical Basis and Computational Solution, G. Alfano, M. Musto</i> <i>Non-equilibrium diffusion and chemically induced crack propagation in polymers, L. Stainier, L. Brassart</i>
16:00						

Lectures: Thursday, June 15th 2017 – End of afternoon

	Auditorium 450	Room 200	Room GH	Room I	Room KL	Room J
Chair.	MS2 Milan Jirásek	MS1 Kerstin Weinberg	BENCHMARK	MS8 Lambertus J. Sluys	MS11 Pedro Camanho	MS6 Michael Kaliske
16:30	<i>A continuous-discontinuous model to simulate crack branching and crack fluid pressure, M. Casado-Antolín, J. Feliu-Fabà, E. Tamayo-Mas, A. Rodríguez-Ferran</i> <i>Regularized XFEM for the failure analysis of FRP-reinforced concrete beams under bending, E. Benvenuti, N. Orlando</i> <i>Phase-Field Modelling of Interface Failure, A. Hansen-Dörr, P. Hennig, M. Kästner, R. de Borst</i>	Variational interface zone model for brittle fracture, I. Khisamitov, G. Meschke (Keynote) <i>Variational fracture mechanics: fracture energy and internal length scale, F. Freddi</i> <i>Comparative analysis of three numerical methods for fracture modeling, W. Kajetan, L. Daridon, F. Dubois, N. Moës, Y. Monerie</i>	Benchmark presentation, M. Poncelet (Keynote) <i>Beam-particle approach to model the quasi-brittle behaviour of concrete - CARPIUC Benchmark, C. Oliver-Leblond</i> <i>Local adaptive refinement method applied to Cohesive zone models for heterogeneous materials, E. Delaume, L. Daridon, Y. Monerie, F. Dubois, F. Perales</i> <i>Modelling Mixed Mode Fracture of Cementitious Materials Using Microplane Model with Relaxed Kinematic Constraint - CARPIUC Benchmark, J. Ožbolt, J. Bošnjak, A. Sharma</i>	<i>Modelling the failure of honeycomb materials with gradient-elasticity, J. Réthoré, T. B. T. Dang, C. Kaltenbrunner</i> <i>Dealing with many interfaces and Lagrange multipliers within the extended finite element method, Z. Csáti, T. J. Massart, N. Moës</i> <i>Extended quadratic elements for strong discontinuities, N. Valoroso, A. Martin</i> <i>Higher Order PDS-FEM and Application for Modeling Brittle Cracks, M. Laliith, M. Kumar Pal, M. Hori</i>	<i>Fibre direction tracking to solve mesh bias in continuum damage modelling of composite matrix cracks, S. Mukhopadhyay, S. R. Hallett</i> <i>On matrix cracking and splits modeling in laminated composite, M.-Q. Le, H. Bainier, P. Ladevèze, D. Néron, C. Ha-Minh</i> <i>Crack Initiation and Propagation in Textile Composites at the Mesoscopic Scale, M. Hirsekorn, A. Doitrand, C. Fagiano, A. Mavel, V. Chiaruttini</i> <i>A constitutive law for modeling elasto-plasto-damage mechanisms in UD-ply: Damage evolution under multiaxial strain states, J. Kaul, B. Dohnál, H. Pettermann</i> <i>Progressive Failure Analysis of Composite Structures Based on the Strain Invariant Failure Theory, E. Pitz, M.-C. Miron, Z. Major</i> <i>Numerical analysis of the single fiber fragmentation test, F. P. van der Meer, S. Raijmakers, I. B. C. M. Rocha</i>	<i>A micro-macro approach to strain-crystallizing rubber-like materials, C. Linder, R. Rastak</i> <i>Physically-based constitutive modeling of rubber-like materials, V. Ngoc Khiêm, M. Itskov</i> <i>Experimental characterization of crack growth in polyurethane membranes, T. Corre, M. Coret, E. Verron, B. Leble, F. Le Lay</i>
18:30						

Program Overview – Friday, June 16th 2017

8:45 - 9:30	Auditorium 450 Plenary Lecture <i>A new finite element framework for the modeling of ductile fracture mechanisms in heterogeneous microstructures,</i> Pierre-Olivier BOUCHARD				
9:30 - 10:15	Auditorium 450 Plenary Lecture <i>Recent research results on phase-field modeling and computation of brittle fracture,</i> Laura DE LORENZIS				
10:15 - 10:45	Coffee Break				
10:45 - 12:45	Audit. 450 MS2	Room 200 MS1	Room GH Benchmark	Room I MS7	Room KL MS11
12:45 - 14:00	Area R2 Lunch				
14:00 - 15:00	Farewell,...				

Lectures: Friday, June 16th 2017 – Morning

	Auditorium 450	Room 200	Room GH	Room I	Room KL	Room J
Chair.	MS2 Milan Jirásek	MS1 Michael Ortiz	BENCHMARK	MS7 Marco Paggi & David Hills	MS11 Stephen Hallett	
10:45	<i>Phase Field Modeling of Fatigue Failure</i>, C. Kuhn, R. Müller <i>A novel variational phase-field model for the description of fatigue phenomena</i>, R. Alessi, M. Ambati, L. De Lorenzis, S. Vidoli <i>A variational model for fracture with anisotropic surface energy</i>, B. Li, C. Maurini, J.-F. Babadjian <i>Modeling inter/trans granular failure using an anisotropic phase field approach</i>, T. T. Nguyen, J. Réthoré, J. Yvonnet, M.-C. Baietto	<i>An approach to hydraulic fracture by a phase-field model</i>, K. Weinberg, C. Bilgen <i>A Phase-Field Crack Approximation Approach based on Crack Kinematics</i>, C. Steinke, M. Kaliske <i>A model of poromechanical damaging material</i>, A. Pandolfi, M. L. De Bellis, G. Della Vecchia, M. Ortiz	<i>A phase field method for modelling of crack propagation and initiation under complex loadings</i>, T. T. Nguyen, J. Réthoré, J. Yvonnet, M.-C. Baietto <i>Phase-field simulation of interactive mixed-mode fracture tests on cement mortar with full-field displacement boundary conditions</i>, T. Wu, A. Carpiuc-Prisacari, M. Poncelet, L. De Lorenzis <i>Non-local damage model to simulate the quasi-brittle behaviour of concrete CARPIUC Benchmark</i>, A. Carpiuc-Prisacari, K. Kazymyrenko, M. Poncelet, F. Hild <i>Simulation of the Carpiuc test with the Thick Level Set model</i>, A. Salzman, N. Chevaugéon, N. Moës	<i>Practical Comparison of 3D and 2D Finite Element Models with Contact Loading for Crack Driving Forces</i>, M. Pletz, W. Daves <i>The semi-infinite Trench and its application to the solution of Complete contact Problems</i>, A. Balasubramanian, D. Hills <i>An insight into the adhesive wear mechanism using the phase field approach to brittle fracture</i>, M. Paggi, J. Reinoso	<i>Effect of matrix ductility on the failure of thermoplastic composites: a computational micromechanics study</i>, D. Pulungan, A. Yudhanto, H. Wafai, G. Lubineau, R. Yaldiz, W. Schijve <i>Phase field modelling of failure in hybrid laminates</i>, R. Alessi, F. Freddi <i>Numerical stochastic study of porosity and wrinkles defects in composite materials: influence on the mechanical behavior</i>, H. IShak, A. Clément, F. Jacquemin <i>Material, failure, and tensile test simulation model for short glass fibre reinforced polypropylene</i>, A. Kalteis, M. Reiter, M. Jerabek, Z. Major <i>Damage evolution in composite pipes using a continuum damage mechanics formulation.</i>, S. L. Becerra, O. A. González-Estrada, A. Pertuz	
12:45						

Notes:

ECCOMAS Thematic Conference
Program of the Fifth International Conference
on Computational Fracture and Failure
of Materials and Structures

Institut de Recherche en Génie Civil et Mécanique
Ecole Centrale de Nantes
Nantes, France, 14-16 June 2017

