Detailed Sessions (As of 15th July)

(Wednesday 16th July 2025)			
	08 : 00 – 09 : 15	Registration & welcome coffee	EA Lobby
	09 : 15 – 09 : 30	Opening remarks	LT7a
Plenary 1	09 : 30 – 10 : 10	Plenary 1: Fractals in deformation, damage, and fatigue ***Prof. Alberto Carpinteri***	
	10 : 10 – 10 : 40	Presentation by ANSYS： Advances in fracture simulation techniques using Ansys mechanical ***Akhil K S*** (***Senior Application Engineer, Ansys***)	
	10 : 40 – 11 : 10	Group photo & Coffee break	EA Lobby
Parallel Session A1	MS16 - Damage Modelling of Polymer Composites (Session Chair: Vincent TAN, Xin LU, Tong Earn TAY)		LT7a
	11 : 10 – 11 : 30	Modelling Progressive Damage in Fiber-Reinforced Composites *Tong-Earn Tay*	
	11 : 30 – 11 : 50	Constitutive modeling of damage and healing of vitrimer composites *Ryo Higuchi, Manato Kumada, Takayu Nishioka, Tomohiro Yokozeki, Takaya Suzuki*	
	11 : 50 – 12 : 10	Effects of ply-blocking on thin-ply carbon fiber/epoxy laminated composites *Ruth. Ho, C.T. Kow, K.M. Yeoh, K. Raju, T.E. Tay, V.B.C. Tan*	
	12 : 10 – 12 : 30	Enabling multi-stage high-temperature strength evolution prediction of ceramizable composites using a novel multi-field coupled model *Zheng Gong, Huanfang Wang, Chao Zhang*	
Parallel Sessions A2	MS13 - Modeling and Simulation of Damage in Elastic and Plastic Materials (Session Chair: Kathrin Welker,Giang D. Nguyen, Chaitanya Kandekar, Pengfei Gao,Yang Chen)		Eng Aud
	11 : 10 – 11 : 30	Numerical Investigation on Precipitation Hardening of Mg-Gd Alloy *Yang Chen, Chunyan Yang*	
	11 : 30 – 11 : 50	High Throughput Fatigue Characterization *Grant West, Derek Warner*	

	11 : 50 – 12 : 10	**A partitioned computational framework for exploiting damage in stress corrosion cracking of metal matrix composite using phase-field method** *Chaitanya Kandekar , Aravinth Ravikumar, Daniel Höche, Wolfgang E. Weber*	
	12 : 10 – 12 : 30	**Phase Field Modeling of Fatigue in Laser-Powder Bed Fusion and Wrought 316L Notched Specimens** *Warem Fokoua Ferdous , Moritz Braun*	
Parallel Sessions A3	**MS2 - Machine learning in damage mechanics (Session Chair: Johannes Reiner, Zhihong Zhao)**		**EA 06-02**
	11 : 10 – 11 : 30	**Including Bayesian Uncertainty into the Finite Element Simulation of Progressive Damage in Composites: Opportunities and Challenges** *Johannes Reiner*	
	11 : 30 – 11 : 50	**Date-driven model of rock fractures subject to direct shear** *Zhihong Zhao , Jinfan Chen*	
	11 : 50 – 12 : 10	**Transfer and ensemble learning enable prediction of flexural strength in fully-graded concrete with insufficient experiment and simulation** *Xin Wang , Xiangnan Qin*	
	12 : 10 – 12 : 30	**Open-hole tension strength prediction with machine learning** *Jacintha Y.Y. Loh , Vincent B.C. Tan, Tong-Earn Tay*	
Parallel Sessions A4	**MS12 - Application of Damage Mechanics in Civil Engineering Structures (Session Chair: Federico Accornero, Shuigen Hu, Dragoslav Sumarac)**		**EA 06-03**
	11 : 10 – 11 : 30	**Estimation of Low-Cycle Fatigue Strength Based on Low-Cost Tests** *Dragoslav M Sumarac , Zoran B. Perovic, Demir Vatic, Timur Curic, Izet Cama, Maosen Cao*	
	11 : 30 – 11 : 50	**Quantification of probabilistic damage under dynamic excitation in gear digital twin system** *Yawen Zhang , Zhendan Lu, Yunxia Chen*	
	11 : 50 – 12 : 10	**Parameters sensitivity analysis of mechanical property of soil-rock mixtures based on mesoscopic numerical calculations** *Mei Tao , Hao Zhang, Li Cui, Linfei Zhang, Shuigen Hu*	
	12 : 10 – 12 : 30	**Structural Damage Detection by Progressive Continuous Wavelet Transform and Singular Value Decomposition of Noisy Mode Shapes** *Shuigen Hu , Zhichun Ding*	
Parallel Sessions A5	**MS15 - Nonlocal damage mechanics: modeling and computational aspects (Session Chair: Hao Yu, Houssem Badreddine)**		**EA 06-04**
	11 : 10 – 11 : 30	**FEM simulation of a low-cycle fatigue using a cycle jump algorithm. Application to a DP600 preformed sheet component** *Xiao Liu, Carl LABERGERE, Houssem Badreddine*	

	11 : 30 – 11 : 50	**Fracture prediction for various sheet metals using enhanced Continuum Damage Mechanics model** *Kai Zhang*	
	11 : 50 – 12 : 10	**Calibrating a damage model from lattice discrete results** *Gilles Pijaudier-Cabot , Julien Khoury, Gianluca Cusatis*	
	12 : 10 – 12 : 30	**Thermodynamic framework of non-local continuum damage-plasticity model** *Yijun Chen , Mostafa E. Mobasher, Haim Waisman*	
Parallel Sessions A6	**MS3 - Multiscale and Multiphysics Modelling of Damages in Viscoelastic Materials (Session Chair: Yuqing Zhang, Ong Ghim Ping Raymond)**		**EA 06-05**
	11 : 10 – 11 : 30	**Multiscale Modeling of Fracture and Deformation in Heterogeneous Viscoelastic Media: Modeling Concept and Example Cases** *Santosh Reddy Kommidi, Yong-Rak Kim*	
	11 : 30 – 11 : 50	**Inertia effect of deformation in amorphous solids: A dynamic mesoscale model** *Minqiang Jiang*	
	11 : 50 – 12 : 10	**DEM modeling of shear failure behavior of shale with different bedding orientations subjected to direct shear loading** *Zhina Liu , Haifeng Feng*	
	12 : 10 – 12 : 30	**A multiscale damage model of concrete** *Yanpeng Wang*	
	12 : 30 – 13 : 30	**Lunch break**	**EA Lobby**
Plenary 2	**13 : 30 – 14 : 10**	**Plenary 2: Hierarchic domain decomposition for effective damage assessment of large-scale structures** ***Prof. Bassam A Izzuddin***	**LT7a**
Plenary 3	**14 : 10 – 14 : 50**	**Plenary 3: A finite deformation theory for transversely isotropic solid employing multiplicative plasticity in the current configuration** ***Prof. Ronaldo I Borja***	
Transition			
Parallel Sessions B1	**MS16 - Damage Modelling of Polymer Composites (Session Chair: Xin LU, Tong Earn TAY, Vincent TAN)**		**LT7a**
	15 : 00 – 15 : 20	**Mesoscale modeling of brittle-ductile transition in woven thermoplastic composites** *Y. Tan, K.M. Yeoh, K. Raju, V.B.C. Tan*	

	15 : 20 – 15 : 40	**Structural cohesive elements – enlarging element size for the modelling of delamination in composites** *Boyang Chen*	
	15 : 40 – 16 : 00	**Predicting the mechanical performance of Double-Double laminates** *Gang Yang, Jian Shen, Weiyang Zheng, Jinzhao Huang, JiaLong Liu*	
Parallel Sessions B2	**MS13 - Modeling and Simulation of Damage in Elastic and Plastic Materials (Session Chair: Giang D. Nguyen, Kathrin Welker, Chaitanya Kandekar, Pengfei Gao,Yang Chen)**		**Eng Aud**
	15 : 00 – 15 : 20	**Modelling of damage and fracture for aluminum alloy tailor welded blanks considering material heterogeneity** *Pengfei Gao , Mengyan Fei, Zhipeng Ren, Mei Zhan*	
	15 : 20 – 15 : 40	**Simulation of the influence of initial voids on the mechanical behaviour of steel-concrete-steel structures** *Ludovic Jason , Martin Debuisne, Luc Davenne*	
	15 : 40 – 16 : 00	**Strain gradient induced transition of facture mode in microporous metallic materials** *Yanwei Liu , Hao Long, Hang Li, Yueguang Wei*	
Parallel Sessions B3	**MS2 - Machine learning in damage mechanics (Session Chair: Zhihong Zhao, Johannes Reiner)**		**EA 06-02**
	15 : 00 – 15 : 20	**Machine learning assisted calibration of an extended GTN model** *Chenyang Zhang , Xincun Zhuang, Zhen Zhao*	
	15 : 20 – 15 : 40	**Damage mode identification and decoupling in CFRPs by an interpretable and lightweight convolutional neural network** *Menghan Zhang, Yumei Zhao, Jie Zhi, Bin Yang*	
	15 : 40 – 16 : 00	**A CNN-based Deep Learning Framework for Predicting Fracture Properties of Quasi-Brittle Materials** *Xiaowen Chen , Leong Hien Poh*	
Parallel Sessions B4	**MS10 - Gradient damage/phase-field modeling of material's failure (Session Chair: Xiaodan Ren, Lu Hai, Ye Feng)**		**EA 06-03**
	15 : 00 – 15 : 20	**A Multi-Scale Phase Field Framework for Anisotropic Fracture and Strain Gradient Effect of Heterogeneous Materials** *Zhiqiang Yang , Heliang You*	
	15 : 20 – 15 : 40	**A rigorous irreversible gradient damage model with flexible bandwidth and cohesive law** *Hanwei Huang , Hao Yu, Hengan Wu*	
	15 : 40 – 16 : 00	**Staggered algorithms for coupled problems: Convergence analysis and application to phase field modeling of thermal cracking** *Yonghui Zhao , Juhan Jiang, Bing Lyu, Yongxing Shen*	
Parallel Sessions B5	**MS15 - Nonlocal damage mechanics: modeling and computational aspects (Session Chair: Houssem Badreddine, Hao Yu)**		**EA 06-04**

	15 : 00 – 15 : 20	**A new damage-failure model for quasi-brittle material: Nonlocal macro-meso-scale consistent damage model and its advances** *Jianbing Chen , Yudong Ren, Guangda Lu*	
	15 : 20 – 15 : 40	**Fracture analysis of heterogeneous material with orthotropic properties using ordinary state-based peridynamics** *Hanlin Wang , Lei Ju, Satoyuki Tanaka, Erkan Oterkus*	
	15 : 40 – 16 : 00	**Application of a micro-macro elasto-viscoplastic model fully coupled with ductile damage to FEM simulation of metal forming processes** *Ke Cao , N. Hfaiedh, C. Labergere, H. Badreddine*	
Parallel Sessions B6	**MS6 - Impact Damage and Fracture of Materials and Structures (Session Chair: Jie Zhang, Songlin, Cai, Xin Li)**		**EA 06-05**
	15 : 00 – 15 : 20	**Mechanical behavior and damage mechanism analysis of sustainable concrete** *Lin Chen, Xin Li*	
	15 : 20 – 15 : 40	**Field Investigation of Dynamic Response Concrete Bridge Piers under Explosion** *Zhijian Hu , Hao Gen, Zhouyu Zhang*	
	15 : 40 – 16 : 00	**Dynamic fracture analysis of multi-interface piezoelectric composites** *Shuai Zhu , Zhiyong Wang, Hongjun Yu*	
	16 : 00 – 16 : 20	**Coffee break**	**EA Lobby**
Parallel Sessions C1	**MS16 - Damage Modelling of Polymer Composites (Session Chair: Tong Earn TAY, Vincent TAN, Xin LU)**		**LT7a**
	16 : 20 – 16 : 40	**A generic failure model for fiber-reinforced composite laminates** *Xin Lu , Ryo Higuchi, Tomohiro Yokozeki*	
	16 : 40 – 17 : 00	**Numerical Simulation of Fatigue Damage in CFRP Cables Using an Entropy-Based Approach** *Yutong Li , Hinako Shiozaki, Ryo Inoue, Jun Koyanagi*	
	17 : 00 – 17 : 20	**Experimental and simulated ductile failures of auxetichoneycomb-based sandwich structures in three-point bending deformations** *Wenting Li , Kai Soon Fong*	
	17 : 20 – 17 : 40	**Influence of fiber waviness on damage mechanisms in CFRTP laminates** *Takayu Nishioka , Ryo Higuchi, Tomohiro Yokozeki*	
	17 : 40 – 18 : 00	**Development of Efficient Simulation Framework for High-cycle Fatigue of Composite Laminates** *Shiyin ZHOU , Xin LU, Ryo HIGUCHI, Tomo YOKOZEKI*	
	18 : 00 – 18 : 20	**Design of composite charge based on gas-phase sensitization** *Dawei Jia, Tao Zhou , Nannan Zhang, Xiaofei Qi*	

Parallel Sessions C2	MS13 - Modeling and Simulation of Damage in Elastic and Plastic Materials (Session Chair: Chaitanya Kandekar, Giang D. Nguyen, Kathrin Welker,Pengfei Gao,Yang Chen)		Eng Aud
	16 : 20 – 16 : 40	**Simulation of cracks in reinforced concrete beams using extended finite element method including nonlinear material behavior and aggregate interlock stresses** *Adrian Faron , Günter A. Rombach*	
	16 : 40 – 17 : 00	**90-degree peeling of elastic thin films from elastic soft substrates: Theoretical solutions based on cohesive zone models and experimental verification** *Hao Long , Yanwei Liu, Hanbin Yin, Yan Zhang, Qingning Yang, Yueguang Wei*	
	17 : 00 – 17 : 20	**Interactions among multiple hydraulic fractures revealed by a hydro-mechanical coupled model using continuum damage mechanics (CDM)** *Yongjun Yu*	
	17 : 20 – 17 : 40	**Interfacial Dislocation Networks in Nickel-based Superalloys via Atomistic Simulations** *Haifei Zhan , Bin Dong, Chaofeng Lv*	
	17 : 40 – 18 : 00	**A unified temporal-spatial scaling law for hydraulic fracturing of layered heterogeneous rocks** *Quan Wang , Hao Yu, HengAn Wu*	
	18 : 00 – 18 : 20	**Damage evolution in Brazilian splitting tests with different loading angles: experimental and numerical analysis** *Jiaxin Feng , Xu Yang, Gao Li*	
Parallel Sessions C3	MS12 - Application of Damage Mechanics in Civil Engineering Structures (Session Chair: Dragoslav Sumarac, Shuigen Hu, Federico Accornero)		EA 06-02
	16 : 20 – 16 : 40	**The Multi-fractal Scaling Laws (MFSL) of tensile strength and fatigue limit: Experimental confirmation for initially uncracked specimens and scale-ranges beyond one order of magnitude** *Alberto Carpinteri, Federico Accornero*	
	16 : 40 – 17 : 00	**Cumulative damage model for uniaxial and multiaxial fatigue failure** *Zoran B. Perovic, Dragoslav M Sumarac , Stanko B Coric, Maosen Cao, Izet Cama*	
	17 : 00 – 17 : 20	**Beam based damage model for the fracture of architected lattice materials** *Himanshu, Biswajit Pal, Ananth Ramaswamy*	
	17 : 20 – 17 : 40	**Generative AI Techniques for Vibration-based Structural Health Monitoring** *Jun Li*	
	17 : 40 – 18 : 00	**Application of Bispectrum Analysis to Inspection of Fatigue Damage of Beam Structures under the Noise Environment** *Li Cui , Mei Tao, Hao Zhang, Shuigen Hu, Shuai Li*	
	18 : 00 – 18 : 20	**Calibration of the K&C model for Singapore-sourced normal strength concrete under quasi-static Loading** *Jie Zhang , Leong Hien Poh*	

Parallel Sessions C4	**MS1 - Sustainable mechanical performance of cementitious materials (Session Chair: Qi Luo)**		**EA 06-03**
	16 : 20 – 16 : 40	**A coupled thermo-elastoplastic-damage model for nano-silica incorporated concrete** *Xiaoyan Man, Aiqing Xu, J. Woody Ju*	
	16 : 40 – 17 : 00	**Microstructural Damage Evolution of Freeze-Thawed Shotcrete by an Integrative Nano-CT and Nanoindentation Approach** *Mengxin Liu, Pizhong Qiao, Lizhi Sun*	
	17 : 00 – 17 : 20	**Age-related degradation of graphene oxide and its influence on the properties and morphology of cement mortar with graphene oxide** *S. Ganesh, C. Thambiliyagodage, S. V. T. J. Perera, R. K. N. D. Rajapakse*	
	17 : 20 – 17 : 40	**Deciphering the strength origins of LC3: Insights into mechanical performance, predictive modeling, and carbon emission characteristics** *Qi Luo, Xinyu Zhang, Jiaqi Zhang, Lu Fan*	
	17 : 40 – 18 : 00	**The Impact of Portlandite, Calcite, Quartz, and Ettringite Inclusions on the Multiscale Mechanical Behavior of the C-S-H Matrix** *Zhe Zhang, Guoqing Geng*	
	18 : 00 – 18 : 20	**Modified concrete damage-plasticity model for UHPC under quasi-static loading** *Hongyi Yang, Leong Hien Poh*	
Parallel Sessions C5	**MS17 - Damage and Fracture in Materials Processing, Forming, and Additive Manufacturing (Session Chair: Pierre-Olivier Bouchard, Ron Peerlings, Yuichi Shintaku)**		**EA 06-04**
	16 : 20 – 16 : 40	**Formability of multiphase materials – a computational micromechanics study** *Vahid Rezazadeh, Marc Geers, Johan Hoefnagels, Ron Peerlings*	
	16 : 40 – 17 : 00	**A crack prediction model using stress-based variational analysis for composites with ply discontinuities** *M. J. Mohammad Fikry, Vladimir Vinogradov, Shinji Ogihara*	
	17 : 00 – 17 : 20	**Anisotropic machinability of additively manufactured Inconel 718: numerical insights into microstructural influence** *Jiaming Zhan*	
	17 : 20 – 17 : 40	**A CDM-like constitutive law with cohesive cracks to realize change of fracture behavior in ductile-to-brittle transition temperature** *Seishin Matsui, Yuichi Shintaku, Kenjiro Terada*	
	17 : 40 – 18 : 00	**Environment-force-dependent damage behaviors and performance of the high-strength aluminum alloy friction stir welding joints** *Mei Zhan, Weifeng Xu, Hongjian Lu, Yanfei Wang*	
	18 : 00 – 18 : 20	**Analytical Considerations in the Evaluation of Adhesive Properties of CFRP** *Yuto Masaki, Sohta Oshima, Ryo Inoue, Jun Koyanagi*	
Parallel Sessions C6	**MS8 - Impact induced damage and fracture behavior of materials at micro-/nano-scale (Session Chair: Minqiang Jiang, Xianqian Wu, Wanghui Li, Chao Wang)**		**EA 06-05**

	16 : 20 – 16 : 40	**Scaling law for impact resistance of amorphous alloys connecting atomistic molecular dynamics with macroscale experiments** *Xiangian Wu , Chenguang Huang, William A. Goddard III*
	16 : 40 – 17 : 00	**A dynamic strain gradient brittle fracture model based the two-scale asymptotic expansion theory** *Meizhen Xiang , Yipeng Rao, Quanzhang Li, Junzhi Cui*
	17 : 00 – 17 : 20	**Micro-ballistic impact of a Co33Os20Ta10B37 metallic glass with ultrahigh dynamic strength** *Gan Ding , Mingqiang Jiang*
	17 : 20 – 17 : 40	**Ultrahigh dynamic strength and graphene-level impact resistance achieved in a crystal-glass nanostructured Al alloy** *Hongbo Zhou , Minqiang Jiang*
	17 : 40 – 18 : 00	**Energy absorption and plastic deformation of random bit-continuous nanoporous metallic glass under shock loading** *Wenxuan Tang , Lanxi Feng, Zhuochen Chen, Wanghui Li, X.C. Tang, Lingyi Meng, Xiaohu Yao*
	18 : 00 – 18 : 20	**In-situ scanning electron microscopy analysis of creep-induced damage behavior of initial pores in nickel based single crystal superalloy** *Ziyuan Song , Dawei Huang, Yanxiao Jun*
	18:20	**Day end**

(Thursday 17th July 2025)			
	08 : 30 – 09 : 00	**Registration & welcome coffee**	**EA Lobby**
Plenary 4	**09 : 00 – 09: 40**	**Plenary 4: Temperature-dependent ratchetting-fatigue interaction of extruded AZ31 magnesium alloy: Experiments and models** ***Prof. Guozheng Kang***	**LT7a**
Plenary 5	**09 : 40 – 10 : 20**	**Plenary 5: Damage modelling for the design of very large aircraft structures** ***Prof. Silvestre Pinho***	
	10 : 20 – 10 : 40	**Coffee break**	**EA Lobby**
Parallel Sessions D1	**MS10 - Gradient damage/phase-field modeling of material's failure (Session Chair: Lu Hai, Ye Feng, Xiaodan Ren)**		**LT7a**
	10 : 40 – 11 : 00	**Multi-scale, multi-physics simulation of pitting corrosion evolution in hydraulic steel structures** *Guofeng Qian, Zhen Hu, Michael D. Todd*	
	11 : 00 – 11 : 20	**Phase-field method of cohesive fracture** *Ye Feng , Lu Hai, Jie Li*	
	11 : 20 – 11 : 40	**A Multi-Physics Phase-Field Framework for Modeling Chloride-Induced Corrosion and Cracking in Reinforced Concrete under Diverse Marine Environments** *Jiangrui Qiu , Decheng Feng*	
	11 : 40 – 12 : 00	**Modelling of corrosion-induced damage process in reinforced concrete** *Zeyuan Jing , Leong Hien Poh*	
Parallel Sessions D2	**MS8 - Impact induced damage and fracture behavior of materials at micro-/nano-scale (Session Chair: Xianqian Wu, Wanghui Li, Minqiang Jiang, Chao Wang)**		**Eng Aud**
	10 : 40 – 11 : 00	**Numerical simulation on the damage mechanism of TATB F2314 polymer interface** *Li Lv, Jun Chen*	
	11 : 00 – 11 : 20	**The deformation mechanisms and strength evolution of CoCrFeMnNi High-Entropy Alloys under shock loading** *Wanghui Li*	
	11 : 20 – 11 : 40	**Spallation of several random alloys by nonequilibrium largescale molecular dynamic simulations** *Kun Wang*	

	11 : 40 – 12 : 00	**Revealing the fracture mechanism of HfNbTaTiZr refractory high-entropy alloy by X-ray tomography** *Hong Chen, Ruitao Qu, Haotian Ma, Shaogang Wang, Feng Liu*	
Parallel Sessions D3	**MS0- General submission (Session chair: Anthoni Giam)**		**EA 06-02**
	10 : 40 – 11 : 00	**Pixel level segmentation and surface wear evaluation of railway rail surface running band** *Mingjing Yue, Jian Yang, Xiancai Yang, Zeyu Liu, Jingmang Xu, Ping Wang, Yao Qian, Allen A. Zhang*	
	11 : 00 – 11 : 20	**A new threshold model for physically small crack and long crack based on CTOD** *Dian Wang, Lindong Chai, Yihai He, Wei Zhang*	
	11 : 20 – 11 : 40	**A combined damage model for fracture in composites** *Harshdeep Sharma, Akhilendra Singh*	
	11 : 40 – 12 : 00	**A physically small crack growth model based on CTOD** *Lindong Chai, Dian Wang, Yihai He, Wei Zhang*	
Parallel Sessions D4	**MS5 - Damage-coupled Constitutive Models and Their Application (Session Chair: Ziyi Wang, Li Yu)**		**EA 06-03**
	10 : 40 – 11 : 00	**A generalized Gurson model for loaded "voids"** *Li Yu, Feng Liu, SL Caia, L H Daia, MQ Jiang*	
	11 : 00 – 11 : 20	**Experimental Calibration of a Coupled Creep-Damage-Plasticity Model and Its Application to Creep-Sensitive Structural Components** *Tengchen Rong, Qing Wang, Xiaodan Ren*	
	11 : 20 – 11 : 40	**Suppression of fatigue crack initiation and propagation under low strain conditions through gradient grain refinement** *Kai Wang, Taoshuo Bai, Jingmang Xu*	
	11 : 40 – 12 : 00	**The influence of water content on the mechanical responses of polyacrylamide hydrogels under stress-controlled cyclic loadings** *Xuelian Zhang, Junjie Liu, Jian Li, Zhihong Liang, Qianhua Kan, Guozheng Kang*	
Parallel Sessions D5	**MS17 - Damage and Fracture in Materials Processing, Forming, and Additive Manufacturing (Session Chair:Yuichi Shintaku, Ron Peerlings, Pierre-Olivier Bouchard)**		**EA 06-04**
	10 : 40 – 11 : 00	**Influence of loading path on ductile fracture nucleation based on full-field FE modelling of heterogeneous microstructure** *Rémy Martinez, Daniel Pino Munoz, Pierre-Olivier Bouchard*	
	11 : 00 – 11 : 20	**Progressive damage simulation on additively manufactured curvilinear continuous carbon fiber reinforced polymer composite structures** *Naruki Ichihara, Ryo Higuchi, Sota Oshima, Masahito Ueda, Tomohiro Yokozeki*	
	11 : 20 – 11 : 40	**Advanced Numerical Methods for Multiscale Crystal Plasticity Simulation of Surface Defects** *Vincent Chiaruttini, Christophe Bovet, Marie Bouyx, Vincent Bonnand, Julien Réthoré, Nicolas Gicquel, Aurélien Vattré*	

	11 : 40 – 12 : 00	**Fatigue Life Evaluation of Single Lap Adhesive Joints Based on Entropy Damage Modeling** *Maruri Takamura , Yutong Li, Shin-ichi Takeda, Sota Oshima, Masayuki Nakada, Jun Koyanagi*	
	12 : 00 – 12 : 20	**Investigation of interface microvoid growth and evolution of bimetallic bonding process for carbon steel/stainless steel** *Chaoyang Sun , Lianjing Hao, Huijun Liang, Lingyun Qian,Chunhui Wang*	
	12 : 00 – 13 : 00	**Lunch break**	**EA Lobby**
Parallel Sessions E1	**MS10 - Gradient damage/phase-field modeling of material's failure (Session Chair: Ye Feng, Lu Hai, Xiaodan Ren)**		**LT7a**
	13 : 00 – 13 : 20	**A Semi-Explicit Computational Framework for Efficient Phase Field Modeling of Complex Fracture Patterns** *Lu Hai*	
	13 : 20 – 13 : 40	**Global-local adaptive meshing method for phase-field fracture modeling** *Hao Yu , FengYu Cheng*	
	13 : 40 – 14 : 00	**3D Phase-field simulation of crack growth resistance curves in pressure vessel steel considering elasto-plasticity** *Thamaraiselvi Kumaresan , Sundararajan Natarajan*	
	14 : 00 – 14 : 20	**Hydraulic fracturing in layered heterogeneous shale: The interaction between adjacent weak interfaces** *YiLun Zhong , Hao Yu, HengAn Wu*	
	14 : 20 – 14 : 40	**A Localizing Gradient Damage Model for the Dynamic Fracture of Quasi-brittle Materials and its Simple Implementation in ABAQUS** *Guangyuan Yang , Leong Hien Poh*	
	14 : 40 – 15 : 00	**Localized Impact Response of Auxetic Sandwich Panels: Comprehensive Analysis and Novel Assessment Method** *Fanghao Han , Leong Hien Poh*	
Parallel Sessions E2	**MS8 - Impact induced damage and fracture behavior of materials at micro-/nano-scale (Session Chair: Wanghui Li,Chao Wang, Minqiang Jiang, Xianqian Wu)**		**Eng Aud**
	13 : 00 – 13 : 20	**Impacting fracture behaviors of MXene-based thin film** *Chao Wang , Xianqian Wu*	
	13 : 20 – 13 : 40	**Scaling law of launch velocity in laser-induced microparticle impact testing** *Zhoupeng Gu , Yiping Song, Minqiang Jiang, Qiuyun Yin, Chenguang Huang, Xianqian Wu*	
	13 : 40 – 14 : 00	**Damage and failure behavior of single fibers under transverse impact** *Xudong Lei , Xianqian Wu*	
	14 : 00 – 14 : 20	**Spatial scale effect and statistical characteristics of cavitation in liquid aluminum: MD simulation and modeling analysis** *Dongdong Jiang , Jianli Shao*	

	14 : 20 – 14 : 40	**Machine-learning informed atomistic mechanisms of hierarchical plastic deformations in high entropy (Zr0.2Hf0.2Ti0.2Nb0.2Ta0.2)C under shock loading** *Lanxi Feng , Wenxuan Tang, Zhuochen Chen, Xiaoqing Zhang, Guglielmo Vastola, Fu-Zhi Dai, Xiaohu Yao, Yong-Wei Zhang, Wanghui Li*	
	14 : 40 – 15 : 00	**Micro-particle impact response of tissue-mimic hydrogels** *Chen Duan, Jinlei Dong, Xianqian Wu, Zhengjin Wang*	
Parallel Sessions E3	**MS6 - Impact Damage and Fracture of Materials and Structures (Session Chair: Xin Li, Jie Zhang, Songlin Cai)**		**EA 06-02**
	13 : 00 – 13 : 20	**Scaling laws for two-sphere collision** *Songlin Cai*	
	13 : 20 – 13 : 40	**Investigating High-Temperature and High-Strain-Rate Effects on Damage Growth and Fracture in Taylor Rod Impact for IS2062: 2006 GR E410W A Steel** *Manoj Kumar , P M Dixit*	
	13 : 40 – 14 : 00	**Experimental and numerical study on the penetration resistance of explosive welded A7075/A1060/TC4 composite plate** *Xiang Chen , Guofeng Liang, Jiawen Huang, Guichun Zhu*	
	14 : 00 – 14 : 20	**Releasing Energy Behavior and Deformation Mechanism in Energetic High-Entropy Alloys upon Impact Loading** *Zhong Wang , Zhiming Jiao, Jie Zhang, Junwei Qiao, Zhihua Wang*	
	14 : 20 – 14 : 40	**Energy partitioning of crack propagation in rock: a peridynamics study** *Xu Li , Daniel Dias-da-Costa, Luming Shen*	
	14 : 40 – 15 : 00	**Study on mechanical properties of concrete reinforced with coal gasification ash slag** *Nie Qingke, Li Huawei, Yang Haipeng, Ma kang , Zhang Rihua*	
Parallel Sessions E4	**MS5 - Damage-coupled Constitutive Models and Their Application (Session Chair: Li Yu, Ziyi Wang)**		**EA 06-03**
	13 : 00 – 13 : 20	**Mesomechanical low-cycle fatigue damage theory of extruded AZ31 magnesium alloy** *Ziyi Wang , Chao Yu, Shengchuan Wu, Xiqiao Feng, Guozheng Kang*	
	13 : 20 – 13 : 40	**Simulation of Full-Life Ratcheting Behavior of U71Mn Rail in Pre-Corrosive Environment Using a Damage-Coupling Cyclic Plasticity Constitutive Model** *Mengzhen Xie , Xiang Xu, Guozheng Kang, Qianhua Kan*	
	13 : 40 – 14 : 00	**A coupled damage constitutive model for carbide-free bainitic rail steel considering martensite transformation** *Xiang Xu , Qianhua Kan, Guozheng Kang*	
	14 : 00 – 14 : 20	**Oscillatory Instability of Fluid-driven Fracture in Porous Materials** *Wenlong Xu , Hao Yu, HengAn Wu*	

	14 : 20 – 14 : 40	**A unified multi-phase-field model for Rayleigh-Damköhler fluid-driven fracturing** *Bo Li , Hao Yu and HengAn Wu*	
Parallel Sessions E5	**MS17 - Damage and Fracture in Materials Processing, Forming, and Additive Manufacturing (Session Chair: Ron Peerlings, Pierre-Olivier Bouchard, Yuichi Shintaku)**		**EA 06-04**
	13 : 00 – 13 : 20	**Comparative study on CDM-like constitutive laws combined with Tresca-type and Mises-type yield functions** *Yuichi Shintaku , Kenjiro Terada*	
	13 : 20 – 13 : 40	**Controlling hot cracking in matrix composite coatings produced by laser surface cladding** *Roya Darabi, Erfan Azinpour, Ana Reis, Jose Cesar de Sa*	
	13 : 40 – 14 : 00	**Damage and fracture in the deformation of materials and deformation-based manufacturing** *Mingwang Fu*	
	14 : 00 – 14 : 20	**Reliability Analysis Framework for Rail Joint Wear under Stochastic Parameters Based on Transient Rolling-Sliding Contact inExplicit Finite Element Method** *Tao Liao , Haozhe Li, Jingmang Xu*	
	14 : 20 – 14 : 40	**Rolling contact fatigue damage on tooth surface evolution modeling and in-situ dynamic monitoring** *Zhendan Lu , Yunxia Chen, Yawen Zhang*	
Parallel Sessions E6	**MS9 - Damage characterization of advanced composite materials and structures (Session Chair: Jie Zhi, Libin Zhao)**		**EA 06-05**
	13 : 00 – 13 : 20	**Investigation on damage behavior of woven composites under high and low cycle fatigue loads** *Licheng Guo , Zhanguang Chen, Zhongyu Wang*	
	13 : 20 – 13 : 40	**Strength prediction of composite bolted joints under hygro-thermal mechanical coupling via progressive damage method** *Meijuan Shan , Yu Gong, Fengrui Liu, Libin Zhao*	
	13 : 40 – 14 : 00	**Failure mechanism and multi-scale simulation of high-speed impact damage of 3D woven composites** *Bowen Wu , Chao Zhang*	
	14 : 00 – 14 : 20	**Translaminar fracture of Double-Double composite laminates** *Xiang Li , Jie Zhi, Bin Yang*	
	14 : 20 – 14 : 40	**Multi-Scale Analysis of Low-Velocity Impact Resistance of Bionic Helicoidal Composite Laminates with void defect** *Chenxi Yang , Yiru Ren*	
	14 : 40 – 15 : 00	**Damage-Tolerant Lightweight Design of Aerospace Structures: Prestress Optimization and Digital Twin Driven Approaches** *Jiaming Guo , Houyang Li, Hongwei Liu, Changguo Wang*	

	15 : 00 – 22 : 00	**Tour to Sentosa (Banquet dinner)**	**EA Lobby**

(Friday 18th July 2025)			
	08 : 30 – 09 : 00	**Registration & welcome coffee**	**EA Lobby**
Plenary 6	**09 : 00 – 09 : 40**	**Plenary 6: Scaled boundary finite element method - a semi-analytical approach to computational damage mechanics** ***Prof. Sundararajan Natarajan***	**LT7a**
Plenary 7	**09 : 40 – 10 : 20**	**Plenary 7: Stochastic damage mechanics of concrete: recent progress and future perspective** ***Prof. Xiaodan Ren***	
	10 : 20 – 10 : 40	**Coffee break**	**EA Lobby**
Parallel Sessions G1	**MS13 - Modeling and Simulation of Damage in Elastic and Plastic Materials** **(Session Chair: Pengfei Gao,Yang Chen, Chaitanya Kandekar, Giang D. Nguyen, Kathrin Welker)**		**Eng Aud**
	10 : 40 – 11 : 00	**Capturing complex fracture propagation using an enriched constitutive modelling framework** *Giang D. Nguyen , Ha H. Bui*	
	11 : 00 – 11 : 20	**Numerical Analysis for Evaluating the Structural Design of a Lunar Inflatable Habitat Module** *Keisuke Mukaida , Li Yutong, Naohiro Uyama, Jun Kojima, Jun Koyanagi*	
	11 : 20 – 11 : 40	**Effects of anisotropy and layered heterogeneity on hydraulic fracture propagation in laminated shale: a 3D numerical approach** *Xiao Ke , Hao Yu, HengAn Wu*	
	11 : 40 – 12 : 00	**A Local Damage Model Using the Heish-Ting-Chen Equivalent Strain for Quasibrittle Materials** *Hemam Amarjit Singh , Rimen Jamatia*	
	12 : 00 – 12 : 20	**On the comparison between mixed stabilized finite element formulations and non-local/gradient-enhanced models for fracture modeling in quasi-brittle materials** Anselmo Rodríguez-Moreno, Juan Carlos Pina, *Carlos Felipe Guzmán*	
	12 : 20 – 12 : 40	**Dynamic mechanical characterization and validation of Additive Manufactured Copper** *Yibin Liu , Chenchen Yang, Leong Hien Poh, Vincent Beng Chye Tan*	
Parallel Sessions G2	**MS6 - Impact Damage and Fracture of Materials and Structures (Session Chair: Songlin Cai, Xin Li, Jie Zhang)**		**EA 06-02**
	10 : 40 – 11 : 00	**Research on multi-directional gear walk characteristics of the aircraft dual-wheel main landing gear** *Qiaozhi Yin , Songyang Zhang, Jian Deng, Xiaohui Wei, Hong Nie*	
	11 : 00 – 11 : 20	**A novel impact fatigue testing machine based on electromagnetic technology** *Lubin Huo , Zengqiang Cao*	

	11 : 20 – 11 : 40	***GISSMO Damage Model-Based Analysis of Impact FailureinAluminum Alloy MEGA Casting Front Compartment*** *Changlei Zhang, Jian Yang, Kangle Wang, Bo Liu*	
	11 : 40 – 12 : 00	**Study on the deformation and failure behavior of flat-nosed TC4 titanium alloy projectiles impacting steel target** *Yue Zhou, Xinxin Zhao, Longlong Wang, Wenbo Zhuang, Zhe Chu, Mingshi Wang*	
	12 : 00 – 12 : 20	**Effect of target structural stiffness on projectile fracture during penetration of ultra-high-strength steel plates** *Peng Chen, Yuyao Gao, Wenbo Zhuang, Zhe Chu, Mingshi Wang*	
	12 : 20 – 12 : 40	**Double-stage Gear Cluster-Enabled Metastructure for Ultra-wide Range Continuously Tunable Stiffness** *Bingren Wang, Yiru Ren*	
Parallel Sessions G3	**MS11 - Novel Algorithms, Strategies and Studies for Computational Modeling of Impact Damage (Session Chair: Rahul Dubey, Manoj Kumar)**		**EA 06-03**
	10 : 40 – 11 : 00	**Smoothed Particle Hydrodynamic Analysis of High Velocity Impact on Cryorolled Aluminium Alloy 6082** *Rahul Dubey, Akash Kumar, Sachin S Gautam*	
	11 : 00 – 11 : 20	**Rapid Prediction and Impact Parameter Identification of Interlaminar Damage via Ensembled Deep Learning Model** *Dazhi Zhao, Yinglong Liu, Yujie Xiang, Peng Zhang, Keke Tang*	
	11 : 20 – 11 : 40	**A novel mesostructure modelling of concrete with irregular particles based on spherical DOG wavelet and SDF theory** *Jingzhe Li, Binggen Zhan, Peng Gao, Huiling Sha, Qijun Yu*	
	11 : 40 – 12 : 00	**3-D Fatigue Crack Growth Simulations Using Continuum Damage Mechanics and XFEM** *V.B. Pandey, I.V. Singh, B.K. Mishra*	
	12 : 00 – 12 : 20	**Thermomechanical fracture in functionally graded materials using an adaptive phase-field approach** *Anna Mariya Shajan, Raghu Piska, Sundararajan Natarajan*	
	12 : 20 – 12 : 40	**Enhancing concrete damage-plasticity model II (CDPM2) under complex loading conditions** *Yuening Zuo, Leong Hien Poh*	
Parallel Sessions G4	**MS9 - Damage characterization of advanced composite materials and structures (Session Chair: Libin Zhao, Jie Zhi)**		**EA 06-04**
	10 : 40 – 11 : 00	**The power law on interface damage evolution of carbon fiber reinforced polymer laminates** *Huanyu Li, Chengyu Guan, Lihong Liang*	
	11 : 00 – 11 : 20	**Off-axis mechanical behavior and dynamic characteristics of UHMWPE composite laminates** *Jian Deng, Guangran Shao, Qiaozhi Yin, Jiatao Zhao, Tianjian Lu*	
	11 : 20 – 11 : 40	**Flexural behaviors and failure mechanisms of CFRP sandwich structures with enhanced dual-phase lattice cores** *Yihao Wang, Yiru Ren*	

	11 : 40 – 12 : 00	**Experimental investigation and numerical modelling of the tapered laminated composite structures under tensile loading** *Chuang Zhang , Hongyu Qi, Xiaoguang Yang*	
	12 : 00 – 12 : 20	**Mechanical performance of bio-inspired helicoidal laminate with high axial properties** *Jian Shen , Jialong Liu*	
	12 : 20 – 12 : 40	**A multi-physics and multi-scale digital twin frameworkfor highways on the Qinghai-Tibet Plateau** *Yingjie Deng , J. Woody Ju, Shuangjie Wang, Jianbing Chen, Jin Long*	
	Lunch & Conference Ends		**EA Lobby**