

Tuesday October 29, 2024

Morning

09:30	Keynote Room A0002 Chair: Benoit Blaysat
	Chasing anticracks - How PTV and DIC revolutionized snow avalanche research <i>Alec Van Herwijnen, WSL Institute for Snow and Avalanche Research SLF</i> p.13
10:50	Extrem Room A0002 Chair: Marco Rossi
10:50	X-ray digital image correlation for deformation measurements in extreme environments <i>Elizabeth Jones, Sandia National Laboratories</i> p. 15
11:10	Deformation of CANDU Pressure Tube under Biaxial Stress State at High Temperatures <i>Chukwudi Azih, Canadian Nuclear Laboratories</i> p. 16
11:30	A SHPB digital twin for the optimization of specimens dedicated to heterogeneous high strain rate tests <i>Thomas Fourest, DMAS, ONERA, 59000, Lille, France</i> p. 17

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Afternoon

13:50	Volume measurements Room 109 Chair: Clément Jailin	Inverse and identification methods Room 110 Chair: Fabrice Pierron	DIC Room 223 Chair: Iniyan Thiruselvam N.
13:50	Universal Tomographic Calibration: Achieving 1/100th Voxel Digital Volume Correlation (DVC) Displacement Precision <i>Alex Arzoumanidis, Psylotech, Inc. - Brian Bay, Oregon State University; School of Mechanical, Industrial, and Manufacturing Engineering - André Phillion, McMaster University [Hamilton, Ontario]</i> p. 18	Boundary conditions and constitutive parameter identification <i>Antoine Vintache, EikoSim, Laboratoire de Mécanique Paris-Saclay</i> p. 19	Deformation Behavior Analysis of Honeycomb Structure Under In-plane Compression Using Global DIC <i>Yamaguchi Yuki, Aoyama Gakuin University</i> p. 20
14:10	Dual X-ray and Neutron tomography to observe hydro-mechanics in porous media <i>Hilario Gregg, 3SR Lab</i> p. 21	Characterization of anisotropic hyperelastic behavior with a data-driven approach <i>Annie Morch, Institut de Recherche en Génie Civil et Mécanique Nantes université</i> p. 22	Full-Field Mechanical Deformation Behaviour of Different Metallic Laser Welded Joints under Tensile Loadings <i>Patricio Carrion, Sandia National Laboratories [Albuquerque]</i> p. 23
14:30	Optical Scanning Tomography to measure harmonic displacement fields and to identify visco-elastic parameters distributions <i>Bertrand Wattrisse, Laboratoire de Mécanique et Génie Civil</i> p. 24	Image-based B-Spline beam models of architected materials using Virtual Image Correlation with variable cross-section <i>Jean-Charles Passieux, Institut Clément Ader</i> p. 25	DIC for Detection of Embedded Structures <i>Izabela Nowakowska, Heriot-Watt University</i> p. 26
14:50	Towards color X-ray tomography: Detection of small quartz grains via contrast-enhanced 3D images of carbonate rocks using a CdTe Photon Counting Detector <i>Franck Decroos, Laboratoire Navier</i> p. 27	Material testing 2.0 for viscoelasticity : characteristic time sensitivity vs experiment duration <i>Margot Leclercq, Université Paris Saclay, ENS Paris-Saclay, CentraleSupélec, CNRS, LMPS, 91190, Gif-sur-Yvette, France</i> p. 28	Application of digital image correlation in the characterization of metal powder spreadability for additive manufacturing <i>Lukas Daut, Oregon State University; School of Mechanical, Industrial, and Manufacturing Engineering</i> p. 29
15:10	Measuring residual stresses in 3D woven composite fan blades via DVC <i>Yannick YASOTHAN, Laboratoire de Mécanique Paris-Saclay</i> p. 30	Optimising test sequences for robust material identification using a data assimilation approach <i>Marie Guerder, Institut Clément Ader</i> p. 31	Development of a digital image correlation system for in-situ epoxy cure shrinkage, thermal expansion, and wafer warpage measurements <i>Alexander Landauer, National Institute of Standards and Technology</i> p. 32

16:00	Volume measurements Room 109 Chair: Brian Bay	Inverse and identification methods Room 110 Chair: Elizabeth Jones	Softwares Room 223 Chair: Mark Iadicola
16:00	Using DVC to measure manufacturing differences in 3D woven composite parts <i>Arturo Mendoza, Safran Tech, Laboratoire de Mécanique Paris-Saclay</i> p. 33	Constitutive model validity evaluation for MT 2.0 applications <i>Amar Peshave, MatchID NV</i> p. 34	The Stereo-DIC Challenge 2.0: DIC Strain Comparisons Using Common Images <i>Phillip Reu, Sandia National Laboratories [Albuquerque]</i> p. 35
16:20	Debonding quantification via Digital Volume Correlation. Application to a mortar reinforcement pull-out. <i>Sylvain Langlois, Laboratoire de Mécanique Paris-Saclay</i> p. 36	Identification of heterogeneous elastic parameters with the Equilibrium Gap Method <i>Rémi Haustrate, LMPS - Laboratoire de Mécanique Paris-Saclay, 91190, Gif-sur-Yvette, France.</i> p. 37	R3XA: Toward a metadata standard for experimental (photo)mechanics datasets <i>Jean-Charles Passieux, Institut Clément Ader</i> p. 38
16:40	Projection enhanced DVC to analyze relaxation and crack propagation until failure on architected aluminum alloy <i>Viktor Kosin, Ecole Normale Supérieure Paris-Saclay, Leibniz University Hannover</i> p. 39	Spatial mapping of plastic properties in welds with the VFM <i>Robert Hamill, University of Southampton</i> p. 40	iDVC - Open-Source Interactive Software for Digital Volume Correlation <i>Danica Sugic, STFC Rutherford Appleton Laboratory</i> p. 41
17:00	3D virtual image correlation (3D-VIC) for lattice structures metrology using x-ray radiographs <i>Julien Réthoré, Nantes Université, Ecole Centrale Nantes, CNRS, GeM, UMR 6183, 1 rue de la Noë, France</i> p. 42	A crystal plasticity-based intragranular stress fields identification framework: application to commercially pure aluminium <i>Raphaël Langlois, Nantes Université, Ecole Centrale Nantes, CNRS, GeM, UMR 6183, 1 rue de la Noë, F-44321 Nantes, France</i> p. 43	uCheckMate : An open-source python library for research and development of Finite element stereo digital image correlation <i>Houssein MATAR, Institut Pascal</i> p. 44

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Morning

08:30	Small scale Room A0002 Chair: João Quinta da Fonseca
08:30	Automated, quantitative identification of slip system, twinning & boundary sliding activity maps from EBSD-SEM-DIC data <i>Johan Hoefnagels, Eindhoven University of Technology</i> p. 45
08:50	High resolution 3D stereo DIC for small FOV using the Scheimpflug principle <i>Hendrik Pulju, isi-sys GmbH</i> p. 46
09:10	Study of strain localization and crystal reorientation at the early stage of plastic deformation using LSCM, HR-EBSD and DCT-6D <i>Damien TEXIER, Institut Clément Ader</i> p. 47
09:30	Elevated temperature High Resolution Digital Image Correlation in a Scanning Electron Microscope <i>Allan Harte, UK Atomic Energy Authority</i> p. 48
09:50	Micro-computed topography from SEM backscattered electron multidetector images <i>Stéphane Roux, Laboratoire de Mécanique Paris-Saclay (LMPS)</i> p. 49

Poster session 10h10 → 11h40			
Room A103	Room 102	Room 104	Room 108
<p>Identification of heterogeneous elastic limits in polycrystalline 316L austenitic stainless steel during tensile loading <i>Qi HU, Laboratoire de Mécanique, Multiphysique, Multiéchelle - UMR 9013</i> p. 50</p>	<p>Statistical study of intermittent calorific phenomena associated to the Portevin-Le Chatelier effect in an aluminum alloy <i>Antoine JURY, Université Clermont Auvergne, Clermont Auvergne INP, CNRS, Institut Pascal</i> p. 51</p>	<p>Identifying forces in 2D granular materials using the Virtual Fields Method from strains measured by Localized Spectrum Analysis <i>Kunanon Jongchansitto, Chiang Mai University</i> p. 52</p>	<p>An imaging technique for the strain-engineering of deformable electrodes <i>Fabien Amiot, Franche-Comté Électronique Mécanique, Thermique et Optique - Sciences et Technologies (UMR 6174)</i> p. 53</p>
<p>Enhanced mechanical characterization of AP-HTPB-based soft propellants using DIC <i>David Kumar, Department of Aerospace Engineering, Indian Institute of Technology Madras</i> p. 54</p>	<p>Simultaneous thermal and kinematic full-field measurements on optimal patterns based on thermography and spectral analysis <i>Thomas Jailin, Université Clermont Auvergne, CNRS, Clermont Auvergne INP, Institut Pascal, BP 10448, 63000</i> p. 55</p>	<p>Characterization of the effect of roughness on dynamic ruptures along frictional interfaces <i>Saba Robinary, NANTES UNIVERSITÉ - École Centrale de Nantes</i> p. 56</p>	<p>Developing a new optical strain gage for full-field measurements <i>Adrien Vinel, Université Clermont Auvergne, Clermont Auvergne INP, CNRS, Institut Pascal</i> p. 57</p>
<p>High Throughput Tensile Testing for Characterization of Static Strain Aging <i>Ville Björklund, Aalto University School of Engineering, Department of Mechanical Engineering, PO Box 14200, FI-00076 Aalto, Finland</i> p. 58</p>	<p>Quantifying thermo-elastic cooling and heating during tensile strength testing of solid engineering alloys with a highly sensitive cooled infrared camera <i>STEPHANE BOUBANGA TOMBET, Telops</i> p. 59</p>	<p>Digital Image Correlation Study of Surface Defects on Plastic Bonded Explosives <i>John Graham, Lawrence Livermore National Laboratory</i> p. 60</p>	<p>Development of a flexible and advanced digital image correlation program <i>David Kumar, Department of Aerospace Engineering, Indian Institute of Technology Madras</i> p. 61</p>
<p>Using full-fields measurements to determine the influence of crack velocity and non-singular terms on KIC of an epoxy resin <i>Bastien Lammens, DMAS, ONERA, F-59014 Lille, France</i> p. 62</p>	<p>Michelin's Talk for PM-iDICs 2024 abstracts <i>UMRANI Florian, Michelin - Sophie Charpin, Michelin</i> p. 63</p>	<p>Analyses of grain-scale strain heterogeneities to provide input for polycrystalline models <i>Jean-Patrick Goulmy, Mechanics surfaces and materials processing (MSMP)</i> p. 64</p>	<p>Real-time measurement of surface strain for understanding creep behavior in bending polymer films <i>JIAYI YU, Department of Chemical Science and Engineering, School of Materials and Chemical Technology, Tokyo Institute of Technology [Tokyo], Laboratory for Chemistry and Life Science, Institute of Innovative Research, Tokyo Institute of Technology [Tokyo]</i> p. 65</p>

Poster session 10h10 → 11h40			
Room A103	Room 102	Room 104	Room 108
Measuring the displacement of masonry stones by motion capture <i>Julien Archez, Laboratoire Navier</i> p. 66	Overview of Digital Image Correlation in Aerospace Engineering in India <i>Abhishek Gurudutt, Pyrodynamics</i> p. 67	Microstructural study of additively manufactured ALF357 alloy: Effect of tensile loading and build orientations <i>Avinash Mohan, Indian Institute of Technology Madras</i> p. 68	Elimination of Interpolation Error in Digital Volume Correlation <i>Samuel Wantz, Institut Pprime, Centre Technique des Industries Mécaniques</i> p. 69
Multiview DIC applied to the quantification of damage initiation and growth p. 70		Strain signature of solid-solid phase transitions within a diamond anvil cell <i>Nicolas Bruzy, CEA DAM Bruyères le Châtel</i> p. 71	DIC data filtering proposal for complex environments <i>Gweni Alonso Aruffo, IMT Mines Albi, Centre ICA-A, Albi - Rébecca Bonnaire, IMT Mines Albi, Centre ICA-A, Albi</i> p. 72
Residual stress measurement in tire cables by FIB hole drilling <i>Raphaël Engel, Laboratoire de Mécanique Paris-Saclay</i> p. 73		Understanding Anisotropy of Carbon-reinforced PEEK Using Stereo DIC <i>Vipin Gupta, Birla Institute of Technology and Science</i> p. 74	Evaluation of Influences on Results of Digital Image Correlation by Window of Constant Temperature Bath <i>Ayano Seki, Aoyama Gakuin University</i> p. 75

11:40	Keynote Room A0002 Chair: Brian Bay & Phil Reu
	From random speckles to checkerboard patterns <i>Michel Grédiac, Université Clermont Auvergne</i> p.76
13:15	iDICs meeting Room 109 Chair:

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Afternoon

14:00	Materials Room 109 Chair: Michel Coret	Aerospace Room 110 Chair: Phil Reu	Thermography Room 223 Chair: Janice Barton
14:00	Understanding the behaviour of a Cu-CuAl functionally-graded alloy using DIC <i>Filipa Cunha, Faculdade de Ciências e Tecnologia = School of Science & Technology</i> p. 77	Building simulation models credibility: the role of DIC in a complex structural testing environment <i>Pierre Baudoïn, EikoSim</i> p. 78	Investigation of the dissipative mechanisms in 3D layer-to-layer woven composite under cyclic loading <i>Vincent Le Saux, Institut de Recherche Dupuy de Lôme (IRDL)</i> p. 79
14:20	Localized Deformation and Band Formation in Superelastic Nitinol Wires <i>Dinc Erdeniz, University of Cincinnati</i> p. 80	DIC data integration to achieve multi-measurement system on full-scale wing tests <i>Emily Rolfe, AIRBUS Operations Ltd.</i> p. 81	Investigating heterogeneous strain-induced crystallization in natural rubber with infrared thermography based micro-surface calorimetry <i>Jean-Benoît LE CAM, Institut de Physique, Université de Rennes 1</i> p. 82
14:40	Strength characterisation of Nicrofer–Stellite joint using Digital Image Correlation <i>N. Iniyan Thiruselvam, BITS Pilani K. K. Birla Goa campus, Goa 403726</i> p. 83	Full Field Imaging and Data Fusion for Substructural Testing <i>Riccardo Cappello, University of Bristol</i> p. 84	Infrared Thermography Applied to In-Situ Crack Growth Assessment <i>Lorenzo Bercelli, Institut de Recherche Dupuy de Lôme</i> p. 85
15:00	Experimental Quantification of Ultraslow Slip Rate of Shear Interfaces Using Digital Image Correlation <i>Vito Rubino, NANTES UNIVERSITÉ - École Centrale de Nantes</i> p. 86	Using DIC for Full-Field Measurement of Long Slender Structures <i>Matlock Mennu, NASA Langley Research Center [Hampton]</i> p. 87	Evaluation of Conduction Thermography for Surface Crack Detection in Titanium Specimens: Preliminary Offline Tests and Initial Online Monitoring During Fatigue Tests <i>Rosa De Finis, Università del Salento</i> p. 88

18:10	Keynote Room Chair: Johan Hoefnagels
	Coming soon <i>João Quinta da Fonseca, University of Manchester [Manchester]</i> p.89

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Morning

08:30	Fracture Room A0002 Chair: Jan Neggers
08:30	Automated crack detection in laminated composite materials from optical flow measurements <i>Matthieu Nicol, ONERA, DMAS, Université Paris-Saclay, 29 avenue de la Division Leclerc, 92320 Châtillon, France</i> p. 90
08:50	Stereocorrelation to analyze crack propagation until failure during a shaking table test <i>Amelie Fau, Laboratoire de Mécanique Paris-Saclay</i> p. 91
09:10	In-situ 2D-DIC as a crack growth analysis tool for high-cycle fatigue bending tests <i>linamaria Gallegos Mayorga, École Nationale Supérieure d'Arts et Métiers</i> p. 92
09:30	Enhanced snow fracture toughness estimates through digital image correlation analysis of the elastic behaviour of weak snowpack layers <i>Melin Walet, WSL Institute for Snow and Avalanche Research SLF, Davos Dorf</i> p. 93
09:50	Study of different DIC approaches to measure crack opening/closing levels in a biaxial crack growth trial with combined HCF/LCF loads <i>Andreas Blug, Fraunhofer Institute for Physical Measurement Techniques IPM</i> p. 94
10:10	A new methodology exploiting digital image correlation to detect crack initiation <i>Sylvia Feld-Payet, DMAS, ONERA, Université Paris Saclay [Châtillon]</i> p. 95

11:00	Keynote Room A0002 Chair: Robin Bouclier
	Preconditioned conjugate gradient solver for the linearized optical flow systems <i>Pierre Gosselet, Laboratoire de Mécanique, Multiphysique, Multiéchelle - UMR 9013</i> p.96

11:50	Minisymposium: Math & Algorithms Room A0002 Chair: Robin Bouclier
11:30	Large Motion Tracking Regularization with the Finite Strain Formulation of the Discrete Equilibrium Gap Principle <i>Martin Genet, Mathematical and Mechanical Modeling with Data Interaction in Simulations for Medicine</i> p. 97
11:50	A Procedure for Global Non-Local Digital Image Correlation (NL-DIC) <i>Tushar Bhandari, Indian Institute of Technology Kharagpur</i> p. 98

13:15	iDICs meeting Room 109 Chair:
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14:00	Uncertainty quantification Room 109 Chair: Thorsten Siebert	Thermography Room 110 Chair: Xavier Balandraud	Minisymposium: Math & Algorithms Room 223 Chair: Julien Réthoré
14:00	Development of a virtual DIC approach to improve measurement accuracy and assess experimental set-ups <i>O. Tyley, University of Bristol [Bristol]</i> p. 99	An efficient approach for identifying the coefficients of thermal expansion of CFRPs <i>Janice Dulieu-Barton, Bristol Composites Institute, School of Aerospace, and Mechanical Engineering, University of Bristol</i> p. 100	High-Performance Mechanically Regularized Finite-Element Digital Volume Correlation for Complex Architected Materials <i>Lucas Person, Ecole Normale Supérieure Paris-Saclay, Institut Clément Ader, Institut de Mathématiques de Toulouse UMR5219</i> p. 101
14:20	Image-based data pipeline for fusion engineering qualification and model validation <i>Adel Tayeb, UKAEA</i> p. 102	Study of Non-Adiabatic Thermoelastic Effect in Face-sheet/Core Debonded Composite Sandwich Structures by Means of Full Field Imaging <i>Emily H. L. Leung, Bristol Composites Institute, School of Aerospace, and Mechanical Engineering, University of Bristol</i> p. 103	Beyond Nyquist Theorem: Reconstruction algorithms of down-sampled signals for vision-based vibration measurements <i>Davide Mastrodicasa, Siemens Industry Software NV, Vrije Universiteit [Brussel]</i> p. 104
14:40	Practical assessment of DIC uncertainties in view of FE model validation <i>Fabrice Pierron, MatchID NV</i> p. 105	Characterization of deformation behavior in metallic alloys using high-temperature digital image correlation analysis <i>Seung-Yong Lee, Materials Characterization Center, Korea Institute of Materials Science</i> p. 106	IBIS : Imaging bifurcations in 2D periodic metamaterials <i>Fabien Amiot, Franche-Comté Électronique Mécanique, Thermique et Optique - Sciences et Technologies (UMR 6174)</i> p. 107
15:00	FE validation from DIC data: a practical case study in bending <i>Vahid Firouzbakht, MatchID NV</i> p. 108	Thermal investigations of supercritical CO2 jet impingement and jet structure influence on its cooling ability <i>Maha El nahas, Institut Clément Ader</i> p. 109	The impact of metrics in mechanical imaging <i>Jean-François Witz, Laboratoire de Mécanique, Multiphysique, Multiéchelle - UMR 9013</i> p. 110
15:20	Vibration Measurements: Effect of Varying Exposure Time on Digital Image Correlation <i>Hubert Schreiner, Correlated Solutions Inc. - Nadine Koehler, isi-sys GmbH</i> p. 111	Multi-physic calibration for coupled IR Thermography - Stereo DIC sensor: from target to software <i>Théo SENTAGNE, DGA Techniques aérospatiales, Institut Clément Ader</i> p. 112	Isogeometric surface fitting from tomographic images <i>Dorian BICHET, Institut de Mathématiques de Toulouse UMR5219, Institut Clément Ader</i> p. 113

