Monday 23th April 2018

16:00 – 18:30 Secretariat Opening - Hall Pierre Guillaumat 1

Tuesday 24th April 2018

08:15 – 08:30 Openning Ceremony – *Chairmen: Zoheir Aboura (Roberval UTC-CNRS) & Ayech Benjeddou (Roberval UTC-CNRS & SUPMECA)* - L202

08:30 – 09:15 Plenary Lecture - *Chairman: Ayech Benjeddou (Roberval UTC-CNRS & SUPMECA, France)* - L202
30 years of Eurpopean Union aeronautics research on materials and structures - **Michael Kyriakopoulos** (EC DG R&I - Aeronautics)

09:15 – 10:00 Plenary Lecture - *Chairman : Zoheir Aboura (Roberval UTC-CNRS, France)* - L202
Development of tools for study of composite materials - **Nicolas Carrere** (Safran Tech Composites, France)

10:00 – 10:30 Coffee break – Hall Pierre Guillaumat 2

10:30 – 12:30	MS05: Lifetime/Strengh – ***Chairman : Frédéric. Laurin (ONERA, France)*** – L202	MS09: Damage/Fracture – ***Chairwoman : Xiaojing Gong (ICA, France)*** – L200	MS10: Smart materials – ***Chairman: Ayech Benjeddou (Roberval UTC-CNRS & SUPMECA, France)*** – L103
10:30 – 10:50	*Determination of the longitudinal compressive strength of a CFRP ply through a tensile test on a laminate* - **Frédéric Laurin** (France)	*Identification of delamination propagation under mode II fatigue loading for several carbon-fiber laminated composites* - **Xiaojing Gong** (France)	*Vibration control by RL shunted piezoelectric proof-mass absorbers* - **Jan Høgsberg** (Denmark)
10:50 – 11:10	*Whöler curve simulations for angle plies laminates made of unidirectional carbon fiber epoxy matrix laminates* - **Laurent Gornet** (France)	*Investigation of damage evaluation and life prediction in CFRP laminates under cyclic loading through an energy dissipation approach* - **Jia Huang** (France)	*3D mixed finite elements for curved, flat piezoelectric structures* - **Martin Meindlhumer** (Austria)
11:10 – 11:30	*A ply scale damage model for the prediction of fatigue life and residual strength of laminated composites* - ***Christophe Bois*** *(France)*	*Failure evolution analysis of composite laminates with circular cutouts* - **Zheng Li** (China)	*Mixed finite elements for smart structures suitable for large deformations and large aspect ratios* - **Astrid Pechstein** (Austria)
11:30 – 11:50	*Accelerated testing and experimental modal analysis in vibration fatigue* - **Amaury Chabod** (France)	*Analyses of characteristic length and strength of composite laminates with holes based on characteristic length scale* - **Jianxiang Wang** (China)	*Connecting sensors inside smart castings* - **Raul Carlsson** (Sweeden)
11:50 – 12:10	*Qualification of vibrating components: from mission profiling to fatigue damage calculation* - **Mohamed Bennebach** (France)	*Real-time monitoring of shear strength of single lap hybrid composite structure based on fiber optic sensor* - **Jiwei Huang** (China)	*New piezoelectric shunt method based on the effective electromechanical coupling coefficient: validation and 3D implementation* - **Johan Toftekaer** (Denmark)
12:10 – 12:30	Experimental analysis of design parameters on the failure of composite material structures - **Dominique Martini** (France)	Coupled stress and energy criterion for composite failure in single lap adhesive joints – **Andreas Talmon L'armée** (Germany)	*Open-Circuit static sensing solutions of adaptive beam cantilevers* - **Majed Majeed** (Kuwait)

12:30 – 14:00 **Lunch** – Hall Pierre Guillaumat 2

14:00 – 16:00	**SS04: SAW/RFID** ***– Chaiman: Pascal Nicolay (CTR, Austria)–*** **L103**	**SS05: Reliability** ***– Chairman: Abdelkhalak El-Hami (INSA Rouen, France)–*** **L202**
14:00 – 14:20	*Optimization of the properties of piezoelectric structures with an inhomogeneous coating* - **Valery Kalinchuk** (Russia)	*Numerical simulation of an electronic using Phase Change Material (PCM)* - **Abdelkhalak El-Hami** (France)
14:20 – 14:40	*Effect of lattice-misfit strain on the surface acoustic waves propagation in epitaxial barium strontium titanate thin films* - **Pavel E. Timoshenko** (Russia)	*Optimization of the solder Joints of an embedded mechatronic system using kriging based evolution strategy* - **Hamid Hamdani** (France)
14:40 – 15:00	*SAW RFID sensors and devices for industrial applications, a short review* - **Pascal Nicolay** (Austria)	*An approach for the reliability based design optimization of shape memory alloy structure* - **Fatma Abid** (France)
15:00 – 15:20	*Package-less SAW RFID sensors for structural health monitoring applications: a concept study* - **Hugo Chambon** (Austria)	*Reliability based design optimization of transmission loss of a simple expansion chamber muffler* - **Khalil Dammak** (France)
15:20 – 15:40	*SAW RFID tags for aircraft structure monitoring* - **Gudrun Bruckner** (Austria)	*Damage tolerance reliability method for aerospace structures* - **Rudy Chocat** (France)
15:40 – 16:00	*Energy harvesting by floating flaps: exploiting flutter-induced vibrations* - **José Ferreira** (Portugal)	

16:00 – 16:30 **Coffee break** – Hall Pierre Guillaumat 2

16:30 – 17:15 **Plenary Lecture** - *Chairman: Nicolas Carrere (Safran Tech Composites, France)* - L202
Unifying damage mechanics and peridynamics for the objective simulation of material degradation up to complete failure - **Gille Lubineau** (KAUST, Saudi Arabia)

18:00 – 19:00 **Town visit** - appointment at city Hall

19:00 – 20:00 **Conference reception** - at Compiègne city hall, appointment there

Wednesday 25th April 2018

08:30 – 09:15 Plenary Lecture - *Chairman: Ayech Benjeddou (Roberval UTC-CNRS & SUPMECA, France)* - L202
Integrated smart and multifunctional materials for aircrafts - **Peter Wierach** (DLR, Germany)

09:15 – 10:00 Plenary Lecture - *Chairman: Afzal Suleman (Univ. Victoria, Canada)* - L202
Progress and constraints of structural health monitoring in aviation - **Christian Boller** (Univ. Saarland, Germany)

10:00 – 10:30 Coffee break – Hall Pierre Guillaumat 2

10:30 – 12:30	MS01: SHM/Surveillance – ***Chaiman: Nazih Mechbal (ENSAM, France)*** – L103	GS - Materials – ***Chairman: François Trochu (EP-Montreal, Canada)*** & **Abderrazak El Ouafi (UQAR, Canada)** – L202	MS02: Bio Composite – ***Chairman: Kamel Khellil (Roberval UTC-CNRS, France)*** – L200
10:30 – 10:47	*Defect imaging on CFRP and honeycomb panels* - **Andrii Kulakovskyi** (France)	10:30 – 10:50 *An experimental and numerical approach to characterize and reduce wear of aeronautical axial piston pumps* - **Guillaume Schuhler** (France)	10:30 – 10:50 *Mechanical properties of flax fibre non woven during preforming* - **Fatma Omrani** (France)
10:47 – 11:04	*Laser shock delamination generation and machine learning-based quantification in CFRP composites* - **Nazih Mechbal** (France)	10:50 – 11:10 *Multi-scale and multi-technic microstructure analysis of linear friction welds of two titanium alloy grades: the β-metastable TI-5Al-2Sn-2Zr-4Cr (Ti17) and the near-α Ti-6Al-2Sn-4Zr-2Mo (TI6242)* - **Dorick Ballat-Durand** (France)	10:50 – 11:10 *On a halo based approach to better control the stress field dispersion in 3D Discrete Element Method (DEM) simulation* - **Dounia Moukadiri** (France)
11:04 – 11:21	*Bispectral method of signal processing in problems of low-frequency defectoscopy* – ***Olga Bocharova*** *(Russia)*	11:10 – 11:30 *Recycling strategies for carbon fiber reinforced polymers* - **Norbert Leiss** (Germany)	11:10 – 11:30 *Mode I interlaminar fracture toughness of flax, glass and hybrid flax-glass fibre woven composites* – **El Hadi Saidane** (France)
11:21 – 11:38	*Numerical simulation for development of methodology of stress-strain state control of composite bulkhead for aviation application with the usage of FBG sensors* - **Aleksandr Anoshkin** (Russia)	11:30 – 11:50 *Damage characterization of 3D woven ceramic matrix composite under various mechanical loading* - **Blanche Legin** (France)	11:30 – 11:50 Effect of temperature in the mechanical behavior of hemp fibre woven fabrics/polypropylene composite - **Sheedev Antony** (France)
11:38 – 11:55	*Damage characterization in laminate elastic structures based on guided wave resonance phenomena* - **Artem Eremin** (Russia)	11:50 – 12:10 *Assessment of effective elastic properties and residual stresses in directionally solidified eutectic Al2O3/YAG/Zr02 ceramics by finite element analysis* - **Stephane Gourdin** (France)	

11:55 – 12:12	*Three dimensional ultrasonic imaging of mechanical components by inversion* - **Henri Walaszek** (France)	12:10 – 12:30 *Reconstruction and data compression of three-dimensional composite fiber architecture from microtomographic images* **- François Trochu** (Canada)	
12:12 – 12:30	*Use of advanced ultrasound phased array for non destructive inspection of metallic plate* - **Benoit Dupont** (France)		

12:30 – 14:00 Lunch – Hall Pierre Guillaumat 2

14:00 – 16:00	**SS06: NDT/Assessment – *Chairman: Christian Boller (Univ. Saarland, Germany)* – L103**	**MS07: 3D composites – *Chairwomen: Ivana Partridge (Univ. Bristol, UK)* – L200**	**GS-Structures – *Chairman: Wilfried Becker (TU - Darmstadt, Germany)* – L202**
14:00 – 14:20	*New challenges to NDT in inspections of composite aeronautical applications: a comparative evaluation of infrared thermography, lock-in thermography and digital radiography* - **Patricia Pereira** (Portugal)	*An experimental study of the mechanical behavior of omega stiffeners reinforced by tufting process* – **Alan Martins** (France)	*Layer-wise beam elements based on the Carrera unified formulation and the Reissner's mixed variational theorem* - **Alberto Garcia** (Italy)
14:20 – 14:40	*Optimization of a consistence methodology to obtain probability of detection curves in non-destructive test: integration of human and environmental factors for eddy currents* - **Miguel Reseco Bato** (France)	*Manufacturing and characterisation of tufted preform with complex shape* - **Imen Gnaba** (France)	*Composite sandwich panels for vibration and noise reduction aircraft: experimental validation* - **Marta Santos** (Portugal)
14:40 – 15:00	*An identification framework based on random sets applied to DIC data* - **Pierre Feissel** (France)	*Creating intersections in composites structures using tufting and 3D woven connectors* - **Harry Clegg** (UK)	*Frequency analysis of uncertain parameters for non linear dynamic system by stochastic perturbation method* - **Mohammed Lamrhari** (Morocco)
15:00 – 15:20	*Cyclic indentation as an alternative to classic fatigue evaluation* - **Viktor Lyamkin** (Germany)	*Bridging the gap between modeling and analysis for 3D woven composites using Digital Volume Correlation* - **Arturo Mendoza** (France)	*Modelisation of modal and damping behaviour of bolted assemblies* – **Yvon Goth** (France)
15:20 – 15:40	*Accelerated fatigue data evaluation for aircraft validation activities* - **Peter Starke** (Germany)	*Evaluation Z-pin performance under high-velocity impact conditions* - **Alexander Cochrane** (UK)	*Instrumented buckling test on laminated composite plates* **- Jalal El Yagoubi** (France)
15:40 – 16:00	*Case studies on materials and sensors configuration in thermal convection to suggest an alternative engineering vantage in the face of digital problem growth* - **Erhard Mayer** (Germany)	*A mutli-scaled approach for an interlocking metal/composite assembly* **- Paul Van Der Sypt** (France)	*Numerical models of fabric behaviour using hybrids discrete elastic and hypoelastic modelling* - **Mondher Nasri** (Tunisia)

16:00 – 16:30 **Coffee break** – Hall Pierre Guillaumat 2

16:30 – 17:15 **Plenary Lecture** - *Chairman: Zoheir Aboura (Roberval UTC-CNRS, France)* - L202
From ATR to A350: how composites have revolutionized the aeronautic industry ? - **Simon Maire-Vigueur** (STELIA Aerospace group, France)

17:15 – 18:30 **Poster session** - *Chairman: Mohamed Bennebach (CETIM, France)* – Hall Pierre Guillaumat 2

- *Analysis of stress-strain state in composite materials with different configurations of optical fiber placement* - **Grigorii Serovaev** (Russia)
- *Infusion process monitoring of polymer-matrix composite using an in situ PZT sensor network: a multi-technique approach* - **Corentin Tuloup** (France)
- *Development of equivalent load models, type hydrodynamic shock, for the structural optimisation of aircraft tanks* - **Jacques Dupas** (France)
- *Electrical properties of the hybrid perovskite [C6H5C2H4NH3]2CdCl4 investigation using impedance spectroscopy* - **Abdesselam Belaaraj** (Morocco)
- *Magnetostriction deformation of NO ferromagnetic laminated structure in embedded applications* - **Otmane Lahyaoui** (France)
- *Finite element strategy for nano-reinforced materials modeling* - **Dang Phong Bach** (France)
- *Poroelastic lamella network for extra sound absorption in the low frequency range* - **Li Ke** (France)
- *Effect of ply orientation and prediction of impact damage on nonlinear buckling of aircraft stiffened composite panels* - **Ouadia Mouhat** (Morocco)

20:00 – 23:00 **Banquet Dinner** - at ‘ Salle Saint Nicolas ‘ : Buses leaving from conference venue at 19:30

Thursday 26th April 2018

08:30 – 09:15 Plenary Lecture - *Chairman: Gille Lubineau (KAUST, Saudi Arabia)* - L202
Metallic materials for aerospace applications: state of the art and perspectives - **Anne Denquin** (ONERA, France)

09:15 – 10:00 Plenary Lecture - *Chairman: Ayech Benjeddou (Roberval UTC-CNRS & SUPMECA, France)* - L202
Unmanned air systems: a tool in the design and experimental evaluation of novel aircraft configuration - **Afzal Suleman** (Univ. Victoria, Canada)

10:00 – 10:30 Coffee break – Hall Pierre Guillaumat 2

10:30 – 12:30	**MS10: Smart materials – *Chairman: Ayech Benjeddou (Roberval UTC-CNRS & SUPMECA, France)* – L103**	**SS02: Process/Properties – *Chairmen: Abdelghani Saouab (Univ Normandie Le Havre, France) & Chung Hae Park (Ecole des mines de Douai, France)* – L200**	**GS-Manufacturing/Processing – *Chairman: Lionel Marcin (Safran Tech Composites, France)* – L202**
10:30 – 10:50	*Modelling of piezoelectric composites with mechanical interface effects* - **Andrey Nasedkin** (Russia)	*Air bubbles within a unidirectional non crimp fibrous fabric during RTM process* - **Bouchra Aaboud** (France)	*Monitoring by Acoustic Emission of composite manufacturing* - **Anthony Foulon** (France)
10:50 – 11:10	*An approach for search of optimal location of single piezoelectric element in the structure for control of its dynamic behavior in specified frequency range* - **Dmitrii Oshmarin** (Russia)	*Experimental measurement and numerical simulation of the resin flow in multi-layered preform fabricated by automated dry fiber placement* - **Chung Hae Park** (France)	*A multi-scale strategy for the prediction of the residual stresses developed during the manufacturing of 3D composite parts by RTM process* - **Lionel Marcin** (France)
11:10 – 11:30	*On the solution of problems of modal analysis of electro-viscoelastic structures with external electric circuits using ANSYS* - **Nataliia Iurlova** (Russia)	*Evaluation of a method for determining the permeability of fibrous reinforcements by the use of a gas* - **Kamel Khellil** (France)	*Mechanical properties of Aluminum AlSi7Mg0,6 produced by additive manufacturing* - **Victor Chastand** (France)
11:30 – 11:50	*Modeling of dynamic behavior of electroelastic bodies with external electric circuits on the basis of their electrical analogue* - **Maksim Iurlov** (Russia)	*Modification of fiber reinforced polymers with boehmite nanoparticles by LCM process: processing and properties* - **Gerhard Ziegmann** (Germany)	*Static and dynamic characterization of a flexible scaled joined-wing flight test demonstrator* - **José Carregado** (Canada)
11:50 – 12:10	*The stress-strain analysis of PCM-FOS system with possibility of singular solutions appearance* - **Natalia Kosheleva** (Russia)	*Optimization of the hardness profile in laser surface transformation hardening process of AISI 4340 steel* – **Ahmed Chebak** (Canada)	*Digital factory : Aeronautical application in process engineering and virtual machining* - **Emeric Ostermeyer** (France)
12:10 – 12:30	Modeling and control of smart FGM beams using Euler-Bernoulli beam theory - **Khalid Elharti** (Morocco)	*Laser surface transformation hardening of spur gears: an experimental investigation* - **Abderrazak El Ouafi** (Canada)	*Integration of material and process modelling in a business support system: case of COMPOSELECTOR H2020 Project* - **Salim Belouettar** (Luxemburg)

12:30 – 14:00 **Lunch** – Hall Pierre Guillaumat 2

14:00 – 14:30 **Plenary Lecture** **-** *Chairman : Zoheir Aboura (Roberval UTC-CNRS, France)* - L202
Roots of the future - Materials, techniques and the preservation of France's aeronautical heritage - **Frederick Collinot** (CMV, Compiègne, France)

14:30 – 14:45 **Closing ceremony** - Chairmen: Zoheir Aboura (Roberval UTC-CNRS) & A. Benjeddou (Roberval UTC CNRS & SUPMECA) - L202

15:00 – 17:00 **Visit to CMV (Cercle des machines volantes)** - Buses leaving from conference venue at 15:00