

DYNACOMP CONFERENCE CHAIRPERSONS

Bernard Troclet ASTRIUM Space Transportation
Mohamed Ichchou Ecole Centrale de Lyon
Pierre Ladevèze LMT Cachan- ENS Cachan/CNRS/UPMC/ PRES Universud Paris



INDUSTRIAL ADVISORY COMMITTEE

G. Aridon Astrium SAT
M. Bourgeon Safran
G. Bréard Astrium ST
J. Buffe Thalès
Ch. Cornuault Dassault
J. Gaudin AIRBUS
V. Gomez Molinero CASA
J. P. Grisval ONERA
M. Gruenewald EADS IW
D. Guedra-Desgeorges EADS IW
J. P. Lombard Safran
F. Paris ESI
P. Pasquet SAMTECH
P. Rauch EUROCOPTER
P. Roux CNES
C. Stavrinidis ESA

ACADEMIC ADVISORY COMMITTEE

R. D. Adams Bristol University
O. Allix ENS Cachan
N. Attala Sherbrooke University
D. Aubry ECP
R. de Borst Eindhoven University
T. Burczynski Silesian University of Technology
A. Combescure INSA Lyon
D. Coutellier Valenciennes University
K. Cunefare GT USA
W. Desmet KUL
P. Gaudenzi La Sapienza University
M. A. Hamdi UTC Compiègne
R. Langley Cambridge University
L. Lecce University of Naples
B. Mace ISVR
R. Ohayon CNAM Paris
R. Rolfes Hanover University
Ch. Soize Marne la Vallée University

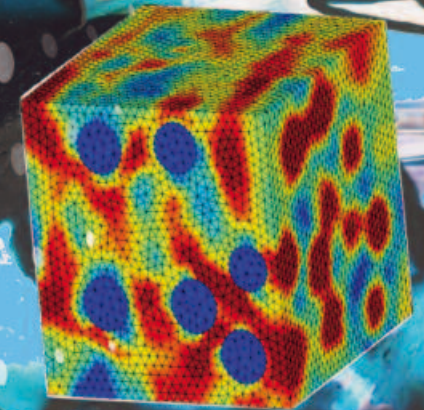
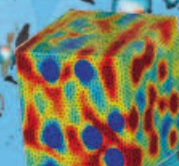
Image : Sylvie Gedda - www.art-gedda.com • Conception graphique : Sophie Bougnon + 33 (0)1 58 30 70 52

DYNACOMP

1st International Conference on Composites Dynamics

Arcachon (France),
May 22 - 24, 2012

Preliminary
Programme



CONFERENCE OBJECTIVES

The conference will bring together representants from the industrial and academic world concerned with dynamic issues of composite materials and structures, over a wide frequency band and various encountered solicitations, from low-frequency to shocks.

Participants will debate and exchange on topics and questions like:

- Composite structures design compared to metallic structures design
- Main issues in the dynamic behaviour of composites materials
- Validity of numerical methods and models for designing composite structures
- Improvement of virtual design of composite structures
-

Outstanding papers are foreseen on following subjects.

- Dynamic modeling and optimal design of composites
- Acoustic transmission
- Dynamic control of composites
- Damage tolerance design
- Shocks
- Experimental verification vs. modelling
-

Perspectives in terms of certification and validation will also be addressed. A real cross-fertilization is expected gathering academic scientists and researchers, with simulation and design engineers, manufacturing and control engineers, project managers and end-users, in the various fields of industry: aeronautics and space, automotive, rail transportation, naval, energy,



PROGRAMME

May 22nd

8H00-9H00

REGISTRATION

- Opening Session •

9H00-9H30

WELCOME ADDRESS

- Introduction to Optimal Design, Dynamic Modeling and Acoustic Transmissions •

9H30-10H00

Keynote given by Grégoire ALLAIRE
Ecole Polytechnique, FRANCE

10H00-10H30

Keynote given by Mohamed Ali HAMDJ
ESI FRANCE, FRANCE

10H30-11H00

COFFEE BREAK

11H00-11H30

Keynote given by Alexander PEIFFER
EADS IW, GERMANY

11H30-12H00

Keynote given by Nouredine ATTALA
Sherbrooke University, CANADA

- Introduction to Passive, Semi Active & Active Control •

12H00-12H30

Keynote given by Patrice RAUCH
EUROCOPTER, FRANCE

12H30-13H00

Keynote given by Robert ADAMS: Vibration Damping
of Composite Structures - University of Bristol, UNITED KINGDOM

13H00-14H30

LUNCH

• Modeling & Optimal Design-1 •

• Acoustic Transmission-1 •

• Passive, Semi Active & Active Control-1 •

14H30-14H50

Towards Damage Prediction of Composite Structures under Bird Strike. Lionel MARCIN, Snecma - Groupe Safran, FRANCE

On the Sound Level within the Payload Cavity of an Aerospace Composite Structural-Acoustic System under Aeroacoustic Excitations. Dimitrios CHRONOPOULOS - Ecole Centrale de Lyon, FRANCE

Study of Honeycomb Panels with Local Cell Resonators to Obtain Low-Frequency Vibrational Stopbands. Claus C. CLAEYS - Katholieke Universiteit Leuven, BELGIUM

14H50-15H10

Dynamic Analysis of Composite Shell Structures Subjected to Fluid Forces. A. A. LAKIS - Ecole Polytechnique de Montreal, CANADA

Design Optimisation of a Composite Panel Structure Using a New Experimental Setup. Marianna VIVOLO - K.U. Leuven, BELGIUM

H? Control of Flexible Structure using Smart Material with Uncertainty. Kai ZHANG - Ecole Centrale de Lyon, FRANCE

15H10-15H30

A Finite Element Theory for Free Vibration of Composite Plates. Linda BOUYAYA - Mentouri University, ALGERIA

A Numerical Local Impedance Model for Vibro Acoustic Analysis of Micro Perforated Composite Structure. Imad TAWFIQ - SUPMECA, FRANCE

Control of Eigenfrequencies of a Multi-layered Plate with the Orientations of its Layers of Fibers. Mekki AYADI - Ecole Nationale d'Ingénieurs de Tunis, TUNISIA

	• Modeling & Optimal Design-1 •	• Acoustic Transmission-1 •	• Passive, Semi Active & Active Control-1 •
15H30-15H50	Mathematical Modeling of an Active Fiber Composite Energy Harvester with Interdigitated Electrodes. Fehmi NAJAR - Tunisia Polytechnic School, TUNISIA	Characterization of the Mechanical and Acoustic Behavior of Metallic Foams Sn-Pb. Abdelmoune'm BELHADJ - Univ. des Sciences et de la Technol d'Alger, ALGERIA	A Low Power Requirement Active Control Scheme: Application to a Piezostack-based Active Mount. Thamina LOUKIL - Ecole Centrale de Lyon, FRANCE
15H50-16H10	Optimization of Dynamic Properties of Composites by Means of Computational Intelligence Methods. Witold BELUCH - Silesian University of Technology, POLAND	Vibroacoustic Simulation of Heterogeneous Multilayer Composite Plates Involving Low Young's Modulus Viscoelastic Materials. Alexis CASTEL - DRIVE - Univ. de Bourgogne, FRANCE	Damping of Thermo-plastic Lightweight Structures - a Sensitivity Analysis and Optimisation Strategy. Matthias KLARNER - Chemnitz University of Technology, GERMANY

16H10-16H40 COFFEE BREAK

	• Modeling & Optimal Design-2 •	• Acoustic Transmission-2 •	• Passive, Semi Active & Active Control-2 •
16H40-17H00	Dynamic Analysis of Composite Structures: HSDT Formulation Combined with Reduction Method. Nouredine BOUHADDI - Université de Franche-Comté, FRANCE	Sound Transmission Loss of Orthotropic Curved Sandwich Panels with Noise and Vibration Control Treatments. Sebastian GHINET - National Research Council Canada, CANADA	Thermally Induced Dynamics of Satellite Flexible Composite Solar Panels. Sidi Mohammed HAMZA-CHE-RIF - Univ. Aboubekr Belkaid, ALGERIA
17H00-17H20	Investigation of Non-linear Free Vibrations of C-S-C-S Symmetrically Laminated Carbon Fibre Reinforced PEEK (AS4/APC2) Rectangular Composite Panels. O. BAHOU - Faculté des Sciences et Techniques de Fès, MOROCCO	Efficient Solution Strategies for Structural-acoustic FE Applications with 3D Modelling of Sound Absorbing Porous Materials. Jean-François DEU - Conservatoire National des Arts et Métiers, FRANCE	Multi-modal Wave Propagation in Smart Composite Structures with Shunted Piezoelectric Patches. Tianli HUANG - Ecole Centrale de Lyon, FRANCE
17H20-17H40	Modeling of Composite Helicopter Blades. Paul CRANGA - EUROCOPTER, FRANCE	Dynamics of Aluminum Extrusion Structure and its Sound Insulation Optimization. Fusheng SUI - Chinese Academy of Science, CHINA	Dynamic Modal Analysis of a Laminated Double Glazing System. Ali AKROUT - National School of Engineers of Sfax, TUNISIA
17H40-18H00	Modeling of Technology of PCM Structure Production. D. V. GRASHENKOV - VIAM, RUSSIA	Acoustic Test Prediction of Large Ka-band Antenna Reflector. Slaheddine FRIKHA - ESI, FRANCE	Piezoelectric Effective Coupling for Dynamic Control of Composites. Ayeche BENJEDDOU - Supméca-Paris, FRANCE

20H00 IC3 CONFERENCE DINNER

May 23rd

• Introduction to Damage & Defect Detection •		
9H00-9H30	Keynote given by Sébastien ROLET: EADS IW, FRANCE	
9H30-10H00	Keynote given by Alain LHEMERY: CEA, FRANCE	

	• Damage & Defect Detection-1 •	• Experimental Validation & Test Facilities-1 •	• Passive, Semi Active & Active Control-3 •
10H00-10H20	Monitoring Dynamic Response of Composite Sandwich Panels Using New Optical Fibre Sensor Approach. Nick EATON - RUAG Space, SWITZERLAND	Through-thickness Testing and Parameter Identification of Textile Reinforced Thermoplastic Composites for Crash and Impact Calculations. Andreas HORNIG - Technische Universitaet Dresden, GERMANY	AMORTI Project: Damping Function for Composite Materials to Reduce the Vibration. Jérôme BÉGUÉ - CETIM, FRANCE
10H20-10H40	Reconfigurable Sensors Network for Monitoring Large-scale Composite Aircrafts Structures Using Both Guided Waves and E/M Impedance Techniques. Hamza BOUKABACHE - LAAS CNRS, FRANCE	Fatigue and High Rate Testing of Composite Materials. Anne LE CAM - Instron, FRANCE	SCT® (StoneComposite Technology). Kolja KÜSE - TechnoCarbonTechnologies GbR, GERMANY

10H40-11H10 COFFEE BREAK

11H10-11H30	Design and Repair of Aeronautical Structures. Aicha REZALA - UST Houari Boumediene, ALGERIA	High Cycle Fatigue (HCF) Testing Methods of Composites Using Pulsed Air-jet Excitation Method. Dario DI MAIO - University of Bristol, UNITED KINGDOM	Virtual Testing for the Prediction of Damping in Space Launchers. David NÉRON - ENS Cachan, FRANCE
11H30-11H50	Ultrasonic Evaluation on Industrial Pipeline Using a Torsional Guided Waves Inspection System. Mohamed KHAR-RAT - Ecole Centrale de Lyon, FRANCE	Simulation of Crash for Composite Parts. Christophe ROUA - COGIT Composites, FRANCE	Non Linear Steady State Periodic Forced Vibration Analysis of Functionally Graded Beams Using an Homogenisation Procedure. Khalid EL BIKRI - Univ. Mohammed V-Souissi, MOROCCO
11H50-12H10	High Cycle Fatigue Delamination Measurement and Growth Prediction. Adam PICKARD - University of Bristol - UNITED KINGDOM	Crash Simulation of Poles Made of Fibre Reinforced Plastics Applied on Airfields. Robert SZLOSAREK - Virtual Vehicle, AUSTRIA	Modal Active Control of a Curved Composite Beam Using Macro-Fiber Composite. Simon CHESNE - Université de Lyon, FRANCE

	• Modeling & Optimal Design-1 •	• Acoustic Transmission-1 •	• Passive, Semi Active & Active Control-1 •
12H10-12H30	Reconstruction of Force Characteristics for non Punctual Objects Impacting Composites Structure. Abdellatif KHAMLICHI - Faculty of Sciences at Tetouan, MOROCCO	Dynamic Testing and Modeling of a Composite Helicopter Main Rotor Blade. Fabio SANTOS - LMS International, BELGIUM	New Solutions for Improved Energy Absorbing materials: Auxetic composites. Trishan A. M. HEWAGE - University of Bolton, UNITED KINGDOM

12H30-14H00 LUNCH

	• Modeling & Optimal Design-3 •	• Damage & Defect Detection-2 •	• Experimental Validation & Test Facilities-2 •
--	---------------------------------	---------------------------------	---

14H00-14H20	Non-linear Free Vibrations of C-S-S Symmetrically Laminated Carbon Fiber Reinforced PEEK (AS4/APC2) Rectangular Composite Plates. E. SENDI - Faculté des Sciences et Techniques de Fès - MOROCCO	Guided Wave Scattering in Stiffened Composite Plates - A Modeling Approach to Help SHM Feasibility Studies. Laura TAUPIN - CEA LIST, FRANCE	Considering Honeycomb Sandwich Beam Design Parameter Variability from Vibration Measurement Data: a Stochastic Approach. Stijn DEBRUYNE - Katholieke Universiteit Leuven, BELGIUM
-------------	--	---	---

14H20-14H40	Numerical Modeling of CFRP-Woven Composites for Crash Simulations. Olivier COUSIGNE - Univ. Lille Nord de France, FRANCE	Thermal Effects in Guided Waves Propagation of Composites Pipes. Sonda CHAABENE - Ecole Centrale de Lyon, FRANCE	Vibration Response Statistics of Fibre Composite Panels from Optical Translucence. Adriano Todorovic FABRO - University of Southampton, UNITED KINGDOM
-------------	--	--	--

14H40-15H00	Finite-element Simulation of Sandwich Plates Subjected to low Velocity Impact: Estimate of the Coefficient of Restitution. Mondher WALI - National school of engineers of Sfax, TUNISIA	Design of Smart Composites with Embedded Electrical Grid for Damage Detection in Composites. Anita ORLOWSKA - Smart-Tech Centre, POLAND	Predicting the Dynamic Response of Sandwich Panels Using a Wave Finite Element Method: Experimental Validation. Dimitrios CHRONOPOULOS - Ecole Centrale de Lyon, FRANCE
-------------	---	---	---

15H00-15H20	Numerical Modelling of the Rupture under Shock of a Composite Material by 'Peeling'. Pascal HUBERT - ASTRIUM ST, FRANCE	Smart CFRP Reinforcements Using Microelectronic Stress Sensors. Catalin CODREANU - LAAS-CNRS, FRANCE	Dynamical Characterization of Thin Hollow Composite Cylinders. Imad TAWFIQ - Institut sup. de mécanique de Paris, FRANCE
-------------	---	--	--

15H20-15H40	A Computational Approach of Mid-frequency Vibrations for Composite Structures. Louis KOVALEVSKY - University of Cambridge, UNITED KINGDOM	On the Interest of 3D Composites Materials. Zoheir ABOURA - UTC, FRANCE	Experimental Investigation into the Dynamics of Bistable Plates. Alex SHAW - University of Bristol, UNITED KINGDOM
-------------	---	---	--

15H40-16H10 COFFEE BREAK

	• Modeling & Optimal Design-4 •	• Damage & Defect Detection-2 Cont'd •	• Exp. Validation & Test Facilities-2 Cont'd •
--	---------------------------------	--	--

16H10-16H30	Non-Linear Free and Forced Vibrations of Fully Clamped Symmetrically Laminated Carbon Reinforced PEEK (AS4/APC2) : Fibres' Orientation Effect. R. BENAMAR - Univ. Mohammed V, MOROCCO	Electrical Sensor Network for Monitoring of Defects in Composite Laminates. Marek KOKOT - Polish Academy of Science, POLAND	An Experimental Study of Damage Accumulation in Woven Jute Reinforced Polyester Resin Laminates due to Repeated Impact. Mohamed E. H. BOURAHLI - Univ. Farhat ABBAS, ALGERIA
-------------	---	---	--

16H30-16H50	Stress Waves Propagation Through Aluminum Skirt/ Composite Motor Case Interface During Firing Test. Abel CHEREVATSKY - IMI, ISRAEL	Model driven versus Data Driven Damage Localization Methods : EMI Monitoring of Thin Composites Structures. Joseph MORLIER - Université de Toulouse - ICA, ISAE, FRANCE	Damage Characterization with an Ultrasonic Method. Jean-Marie MORVAN - LMP Transfert - CANOE I2M, FRANCE
-------------	--	---	--

	• Modeling & Optimal Design-4 Cont'd •	• Acoustic Transmission - 3 •	• Passive, Semi Active & Active Control-4 •
--	--	-------------------------------	---

16H50-17H10	Comparison of Different Techniques for Surrogate Modeling of Copti-X. Evgeny BURNAEV - DATADVANCE, RUSSIA	Vibro-Acoustic Aspects of the Development and Qualification of ARIANE 5 Upper Stages. Jochen ALBUS - ASTRIUM ST, GERMANY	Vibration Control of Composite Structures, Issues and Challenges. Benoit PETITJEAN - EADS Innovation Works, FRANCE
-------------	---	--	--

17H10-17H30	Process/Crash Coupling for Composite Structures Using Finite Element Analysis. Jean-Baptiste MOUILLET - Altair Engineering, FRANCE	Sound Transmission through Panels Made of Composite and Multi Materials. Jean-Louis GUYADER - INSA-Lyon, FRANCE	Adaptive Shunted Piezoelectric Meta-composite: a New Integrated Technology for Vibroacoustic Control. Manuel COLLET - FEMTO-ST UMR 6174, FRANCE
-------------	--	---	---

17H30-17H50	Inverse Method for Identification of Material Properties in Structural Dynamic Numerical Tool. Stéphane ALESTRA - EADS Innovation Works, FRANCE	A Parametric Analytic Study of Transmission Loss and Noise Reduction Factors of an Infinite Multi-Layered. Julien MAGNIEZ - UTC, FRANCE	
-------------	---	---	--

17H50-18H10	Numerical Study on Scale Effects on the Responses of Laminated Composite Plate under low Velocity Impact. Zhefeng YU - Shanghai Jiao Tong Univ., CHINA	Prediction of sound transmission in complex composite structures in the mid and high frequency range. Gérard BORELLO - InterAC, FRANCE	
-------------	--	--	--

May 24th

PLENARY SESSION

• Perspectives in Terms of Certification and Validation •

9H00-9H30 Keynote given by Jérôme BUFFE
THALES, FRANCE

9H30-10H00 Keynote given by Fabrizio SCARPA
University of Bristol, UNITED KINGDOM

10H00-10H30 Debate with the Audience

10H30-11H00 COFFEE BREAK

• Perspectives in Terms of Certification and Validation •

11H00-11H30 Keynote given by Olivier ALLIX : Modeling and Simulation
of Damage and Rupture of Composite under Dynamic Loadings
ENS Cachan - FRANCE

11H30-11H50 Prediction of SEA Parameter and Damping Loss Factor
of Fuselage Panels with Viscoelastic Treatment Using SEA Periodic
Subsystem Formulation - Slaheddine FRIKHA - ESI, France

11H50-12H10 Surrogate Modeling of Buckling Analysis in Support
of Composite Structure Optimization - Evgeny BURNAEV - DATADVANCE, RUSSIA

12H10-12H30 Bloch Wave Modal Analysis and Numerical Investigation
of HF Elastic Wave Propagation in Periodic Assemblies of Thin Structures
Bing TIE - Ecole Centrale Paris, FRANCE

ROUND TABLE - MODELING STATE OF THE ART

12H30-13H30 With Pending Participation of
LMT - ENS Cachan
ESI France
Ecole Centrale Lyon
Altair...

13H30-15H00 FAREWELL LUNCH

NOTIFICATION AND SCHEDULE

- Registration to the conference will be possible as soon as **September 1st, 2011**
- The industrial and academic committees will notify authors from their decision no later than **December 15, 2011**
- A Conference Preliminary Programme will be available no later than **January 15, 2012**
- Final presentations and papers should be received no later than **April 15, 2012**

REGISTRATION FEES

The registration fees include access to the whole conference, delivery of abstracts booklets and conference proceedings, invitation to lunches, coffee breaks & conference dinner.

Delegate Rate:	835 € (698,16 € + VAT 136,84 €)
Speakers and chairmen:	675 € (564,38 € + VAT 110,62 €)
Students:	415 € (346,99 € + VAT 68,01 €)

LOCATION AND ACCOMMODATION

Arcachon offers many hotels at various rates.

Many hotels are located within walking distances (< 15 mn).

A list of recommended hotels at selected rates will be distributed by the organization.

All hotel reservations are to be made by the participants themselves

CORRESPONDANCE

All queries concerning the scientific program should be sent by email to :

Bernard Troclet - bernard.troclet@astrium.eads.net
(with subject : DYNACOMP)

All queries concerning the logistics & organization should be sent by email to :

Mr. Jean-Francois Belon - jfb@avantage-aquitaine.com
(with subject : DYNACOMP)