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Curriculum Vitae

Last Name : **PIERRON**
Date of Birth : 6 April 1966
43 years old

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*: Arts et Métiers ParisTech is the new brand name of Ecole Nationale Supérieure d'Arts et Métiers (ENSAM).

Salient features

- **Very active and innovative research area:** use of full-field deformation measurements in conjunction with inverse solutions to study the mechanical behaviour of materials and structures. International leader in this field. This results in a **strong publication record:** more than 65 papers in JCR referenced international journals, h-index of 19, Scopus, Jan. 2011 More than 150 publications in international and national conference proceedings.
- **Very strong international exposure,** as assessed by significant scientific collaborations with internationally leading groups (some examples):
 - ACCIS group (composites) at Bristol University (Prof. Michael R. Wisnom, Dr Stephen R. Hallett, Dr Fabrizio Scarpa). EPSRC funded projects, two joint PhDs (1 ongoing), several joint publications, and visits of researchers.
 - Optical Engineering research group at Loughborough University (Prof. Jon M. Huntley, Dr Pablo D. Ruiz). EPSRC funded projects, one joint PhD (ongoing), joint publications, and visits of researchers.
 - Department of Mechanical Engineering at the University of South Carolina, USA (Prof. Michael A. Sutton, Prof. Anthony P. Reynolds). One joint PhD (ongoing), joint publications.
 - School of Engineering Sciences, Southampton University (Prof. Janice M. Barton). Joint supervision of a PhD student (ongoing).
 - Washington University in Saint-Louis (USA), Prof. Philip V. Bayly. Joint publication on magnetic resonance elastography.
 - Institute of Mechanical Engineering, Aalborg University, Prof. Ole Thybo Thomsen. Joint supervision of a PhD student (ongoing).
- **Solid experience in journal editing:**

- **Editor-in-Chief of the international journal “Strain” (Wiley-Blackwell), 2010-**
- Associate technical editor for Experimental Mechanics (Springer), 2009 –
- Associate technical editor (ATE) of Strain (2005-2007) and then member of the editorial council and board (2007-2010).
- Guest editor for 4 special issues of Composites Part A (Elsevier) and for 1 special issue of Experimental Mechanics.

- **Solid experience in conference organization:** founding Chair (with Prof. M.R. Wisnom) of the Composites Testing and Model Identification conference series (4 editions starting in 2003, next one in 2011 in Lausanne). Vice Chair of the organization committee of the 17th French Mechanics conference (1200 participants). Chair of the scientific committee of the next ICEM conference (UK, 2014).

- **Strong involvement in scientific societies:** co-opted member of the BSSM National Committee (since 2005), member of the Executive Board of the Society for Experimental Mechanics (2009-2011), member of the Executive Committee of the European Society for Experimental Mechanics (EURASEM), Website Manager and Newsletter Editor.

- **Strong management and money chasing skills:** creation from scratch and development of the LMPF research group from 1999 onwards at ENSAM Châlons (no significant research activity there when I arrived). The group now comprises about 30 persons, among which 2 professors and 9 assistant professors www.lmpf.net.

University degrees

- 1989** Engineering Degree from École Nationale Supérieure d'Électricité et de Mécanique in Nancy (France), major in Mechanical Engineering.
- 1990** Master of Science (DEA) in Mechanics and Thermodynamics from Institut National Polytechnique de Lorraine (with honors).
- 1994** PhD (Doctorat) in Macromolecular Materials and Composites from Lyon I University, France, obtained with the highest grade.
- 1998** 'Habilitation à Diriger les Recherches' (HDR) from Clermont-Ferrand University, France (French degree necessary to supervise PhD students and apply for professorships).

Professional positions

- 1994** Assistant-professor at École Nationale Supérieure des Mines de Saint-Étienne (France), in the Mechanical and Materials Engineering Department led by Professor Georges Verchery and then by Professor Alain Vautrin.
- 1999-** Professor at École Nationale Supérieure d'Arts et Métiers (ENSAM) in Châlons en Champagne (France). Head of the Mechanical Engineering and Manufacturing Research Group.
- 2004-05** Sabbatical, Department of Aerospace Engineering, Bristol University, UK.
- 2006** Promoted to first class professor.

Main administrative duties

Present

- Head of the IFM team, within the LMPF research group.
- Member of the ENSAM national administration board (2002-2010).
- Member of recruitment panels at UTT in Troyes and at the University of Metz (2009)

Past

- Head (1999-2008) of the Mechanical Engineering and Manufacturing Research Group (LMPF, certified by the French Ministry for Research, www.lmpf.net). I created this research group from scratch at ENSAM Châlons when I arrived in 1999 (there was no research there at that time).
- Member of the ENSAM recruitment panel in mechanics (2001-2007, elected twice).
- Member of the recruitment panel of Reims University, in mechanics (2002-2008).

Teaching

Course management

- ENSAM second year mechanical engineering specialization (1999-2001)
- ENSAM final year option "Advanced Design of structures and Components for Vehicles" (2000-2004). About 24 students per year.
- ENSAM final year option "International Research and Development in Mechanics and Materials" (2006 -). About 16 students per year.

- Master degree in experimental mechanics and manufacturing (2004-2007). About 10 students per year.

Main teaching areas

- **Undergraduate level**
 - Solid mechanics (elasticity, beams, plates, principle of virtual work)
 - Vibrations (rigid and deformable bodies)
 - Mechanics of composite materials
 - Optimisation, finite element modelling
 - Experimental solid mechanics (labs)
 - Final year projects, scientific communication (mainly oral presentations)
- **Graduate level**
 - Mechanics of composite materials
 - Machining of composites
 - Identification of mechanical properties of materials
 - Optical full-field measurements

Innovation in teaching

- ENSAM final year option “International Research and Development in Mechanics and Materials” (ReDI). Final year ENSAM course with innovative project-based teaching in the first semester. Final year project spent abroad during the second semester in university-based research groups. Destinations are based on my personal address book. A description of the course can be found at <http://uee-redi.perso.sfr.fr/index.htm> (in French).
- Systematic use of electronic course notes and self-evaluation sheets. Material available on <http://www.camfit.fr/MSD1a/> (in French) for my first-year course on mechanics of deformable solids.

Main research areas

Use of full-field optical measurements and heterogeneous tests for advanced material testing (main present research activity)

- Development of the Virtual Fields Method (identification technique dedicated to full-field measurements). www.camfit.fr
- Application of the VFM to different situations: anisotropic elasticity, heterogeneous materials, elasto-plasticity, wood, vibration damping, high strain rate testing, biomaterials, welds etc. www.camfit.fr
- Measurement of thermal dissipation in cyclically tested materials using infrared thermography.
- Development of innovative full-field measurement techniques at the micro-scale.

Mechanical testing and machining of composites

- **PhD** on the **Iosipescu shear test** for composite materials. Design of a new fixture and application to thick composites. 18 months spent at the University of Bath (UK).
- Work on the **shear strength of composite materials** using the Iosipescu and 10° off-axis tensile test (use of oblique tabs).
- Mechanical testing of composite materials: design of new tests and fixtures, optimisation of existing tests.
- Machining of composite materials.

Main research expertise

- Mechanical testing of materials.

- Composite materials and structures
- Full-field deformation measurements: the grid method, speckle interferometry, digital image correlation, digital volume correlation, magnetic resonance elastography, noise smoothing for strain derivation, metrology (resolution, spatial resolution), including measurements at the microscopic scale.
- High-speed and Ultra High Speed imaging.
- Infrared thermography and thermomechanical couplings.
- Inverse problems concerning the identification of mechanical parameters from mechanical tests. Includes specific approach for full-field measurements (Virtual Fields Method).

Languages

- French (mother language), English (fluent), German (7 years at school, rusty)
- Notions of Spanish and Russian

Other expertise

- Finite element modelling, ANSYS package.
- MATLAB.
- LaTeX word processing.
- Web sites: webmaster and site designer of www.camfit.fr and www.eurasem.org. Some knowledge of XHTML, CSS, PHP and MySQL.
- Some knowledge of Linux (Ubuntu).

PhD supervision and examination

- Junior supervisor of 4 graduated PhD students (1997-2001) in St-Etienne
 - Dr Ezéchiél Alloba (1997), Dr François Cerisier (1998), Dr Yann Poirette (2000), Dr David Chérubin-Grillo (2001).
- Principal supervisor of 10 graduated PhD students at ENSAM
 - Dr Patrick Ghidossi (2003), Dr Hocine Chalal (2005), Dr Yannick Pannier (2006), Dr François Maquin (2006), Dr BaoQiao Guo (2007), Dr José Xavier (2007), Dr Raphaël Moulart (2007), Dr Jin-Hwan Kim (2008), Dr Vinh The Tran (2008), Dr Nathanaël Connesson (2010).
- Principal supervisor of 3 ongoing PhDs
 - Mr Guillaume Le Louëdec (joint project with Prof. M. Sutton at the University of South Carolina, USA), Mr Cédric Devivier (joint project with Prof. M.R. Wisnom, Bristol University), Mr Jiawei Fu (joint supervision with Loughborough University, UK, funded by the Chinese Science Council)
- Participation to external PhD jury panels
 - 4 as president, 12 as reviewer (among which 1 at EPFL, Dr Joël Cugnioni), 3 as examiner.

Main research contracts

Research networks

- Leader of the ENSAM research network on composite materials including five ENSAM research groups from Bordeaux, Paris, Lille and Châlons (2002-2005). Funded by the French Ministry for Research, budget about 30 k€ per year.
- Participation to the CNRS research network (GDR) 2519 "full-field measurements and identification in solid mechanics" (<http://www.ifma.fr/lami/gdr2519>) created in 2003 and led by Professor Michel Grédiac.

Public contracts

- **Regional / National funding (CPER)**
 - Coordinator of the regional project entitled "optimisation of the coating and machining procedures of refractory alloys for forging matrices" (OPTIMAT). The project duration was three years (2002-2004), in partnership with a technical centre specialised in welding and materials (CRITT MDTs, Charleville Mézières) and with two companies: Castolin France (manufacturer of the welding materials) and Ateliers des Janves (forging company). The budget was 428 k€ (from which 220 k€ for my group), plus three PhD grants.
 - Partner of the regional project entitled "full-field measurement at the micro and nano scales" (NANODEF). The project duration is three years (2004-2006), in partnership with a research group from the Technological University of Troyes specialising in nanotechnology (LNIO). The budget was 577 k€ (from which 234 k€ for my group), plus one PhD grant.
 - Partner of the regional project entitled "development and optimisation of a new type of concrete" (DONBAP). The project duration is three years (2006-2008), in partnership with a civil engineering research group from Reims University (URCA). The budget is 237 k€ (from which 63 k€ for my group).
- **National funding**
 - National project ACI
Partner of the project entitled "development of a methodology of full-field kinematic data processing by inverse analysis in order to identify the mechanical properties of interfaces and surface coatings" (2002-2003). The

other partners were Professor Michel Grédiac (Clermont-Ferrand II university leader) and Professor Didier Baptiste (ENSAM Paris). Total funding of 75 k€ (from which 22 k€ for my group), plus a PhD grant.

- National project ANR
Leader of a project funded by the newly established French Research Agency (ANR) and entitled "photomechanics: innovative strategies for the identification of the constitutive behaviour of materials" (Photofit), in collaboration with Professor Michel Grédiac (Clermont-Ferrand II university) and Professor François Hild (LMT Cachan). Duration of three years (2006-2008). Total funding of 266 k€ (110 k€ for my group).
- Contract with CEA in Saclay on the identification of the mechanical behaviour of superconducting materials and structures. Total funding of 82 k€ (2008-2009) and 52 k€ (2010-2011).

▪ **International projects**

- Joint leader of the project "novel methodologies for the identification of composite material mechanical properties from full-field optical measurements" funded by the EPSRC (Engineering and Physical Sciences Research Council, www.epsrc.ac.uk), the British engineering research funding agency. Total funding of £45.000 for one year. Project in the framework of my sabbatical from ENSAM in 2004-2005 and my visiting professor position at Bristol University. Project led in collaboration with Professor Michael R. Wisnom. Completed.
<http://gow.epsrc.ac.uk/ViewGrant.aspx?GrantRef=GR/T07213/01>
- Collaborator in the EPSRC project entitled "Full field measurement techniques for high strain rate testing of composites" funded by the EPSRC. Included an 8 months visit of Dr Raphaël Moulart (from my group) to Bristol. Completed.
<http://gow.epsrc.ac.uk/ViewGrant.aspx?GrantRef=EP/G001715/1>
- Collaborator in the EPSRC project entitled "Depth-resolved phase-contrast optical metrology in life sciences and engineering" led by Dr. Pablo D. Ruiz (Loughborough University). Includes a shared PhD student (Mr Jiawei Fu) to use the Virtual Fields Method on 3D strain measurements inside the human cornea. Underway.
<http://gow.epsrc.ac.uk/ViewGrant.aspx?GrantRef=EP/E050565/1>
- Collaborator in the EPSRC project entitled "3-D strain field mapping of scattering media using Wavelength Scanning Interferometry with application to damaged composites" led by Professor Jonathan M. Huntley (Loughborough University). Includes temporarily hosting a PhD student to train him on the Virtual Fields Method (Mr Tho N'Guyen) and interacting on the processing of the 3D full-field data. Underway.
<http://gow.epsrc.ac.uk/ViewGrant.aspx?GrantRef=EP/F02861X/1>
- Collaborator in the EPSRC project entitled "Full-field data-rich experimental approaches to explain composite material and structural performance and its damage tolerance" led by Professor Janice M. Barton, University of Southampton. Joint supervisor of the PhD of Mr Marco Longana in Southampton (status of visiting professor in Southampton). Underway.
<http://gow.epsrc.ac.uk/ViewGrant.aspx?GrantRef=EP/G042403/1>

▪ **European contracts**

- European grant holder, sectorial grant of the BRITE/EURAM programme (18 months). 1990 – 1992 (PhD thesis).
- Co-organiser of a training course entitled "training on optical methods for mechanical engineers (T/OMME) within the framework of the "training and mobility of researchers" programme of FP4. The training took place from 20 to

24 November 1998 with 13 trainees and 8 tutors from different European countries, with the edition of a CD-ROM.

- Coordinator of the thematic network "characterisation and control of thick composite structures" (CCTCS), within the framework of the "standards, measurements and testing" European programme of FP4. Exploratory phase, 6 partners, 1 year.
- Coordinator of the final proposal of the thematic network "characterisation and control of thick composite structures" (CCTCS), within the framework of the "standards, measurements and testing" European programme of FP4, following the exploratory phase (25 partners). Proposal rated A2 but not funded because of the lack of available funds (end of FP4).

Industrial contracts (amounts available on request)

- Transfer to DCN Indret of the in-plane Iosipescu shear test for thick marine composites, including training sessions and expert work (1995-96).
- Participation to a contract with Hexcel Composites including the training of an Hexcel engineer and expert work in design of composite structures, including several design projects and field tests on industrial sites (1998-99).
- Participation to a technical research group led by Alstom (Le Creusot) grouping together regional university research groups working in mechanical engineering. This group was aimed at submitting research proposal on research themes proposed by Alstom on locomotive bogie applications (1994-1999).
- Participation to a large project concerning the design of a locomotive transmission in composite materials, initiated and funded by Alstom (later Alstom), 1994-99, in collaboration with the "institut supérieur de l'automobile et des transports" (ISAT, Nevers) and the SNCF testing facilities laboratory in Vitry-sur-Seine. This project led to a composite design dividing by about 10 the weight of the existing metallic system (F. Cerisier thesis). Successful testing of two prototypes was undertaken at the SNCF testing facilities. The project was unfortunately abandoned because of manufacturing difficulties.
- Participation to a contract with Saint-Gobain entitled "development of construction products based on glass fibre reinforced cement" (PhD thesis of D. Chérubin-Grillo). The main objective was to validate the use of glass fibres as a substitute for asbestos fibres.
- Contract with CEA Cadarache (2002) concerning the control by infrared thermography of interfaces between carbon/carbon composites and a metallic substrate (plasma facing tiles in the future ITER fusion reactor). Collaboration with Reims University (Dr JL Bodnar).
- Partnership with Airbus UK (Filton, UK) on the application of the virtual fields method to thick composites. Three final year ENSAM projects (2001-2004) and close collaboration during my sabbatical at Bristol university within the framework of the EPSRC contract.
- Transfer to CETIM Nantes of the in-plane Iosipescu shear test, including training session (2004).
- Smaller contracts with the following companies:
 - Renault: study of the fatigue of composite bars in torsion (1997-98).
 - Schlumberger-Dowell: impact performance of cement matrix composites: performance of different reinforcements" (1998).
 - Renault: study of the fatigue performance of metallic components by infrared thermography (1999-2001).
 - SNECMA/SEP: machinability of carbon phenolic composites in turning (1999-2000).

- ASTRIUM Stevenage (GB): air effects on the vibrations of lightweight structures (2000-2001).
- Ifremer Brest: machining of composite tubes (2000-2001).
- GKN Technology Ltd (GB): application of the flexible disc concept to a railway transmission (2001-2002). Ifremer Brest: control of thick composite tubes by infrared thermography (2003-2004).

International experience

Studies and sabbaticals abroad

- 1988-1989: final year student at the University of Bath (Mechanical Engineering) as part of my engineering curriculum in France (exchange student).
- 1990: 6 months stay at the Department of Materials Science of the University of Bath for my DEA (MSc) research project. Supervisors: Prof. Bryan Harris and Prof. Alain Vautrin.
- 1990-1992: 18 months (12 + 6) at the Department of Materials Science of the University of Bath for my PhD through a European BRITE/EURAM grant. Supervisors: Prof. Bryan Harris and Prof. Alain Vautrin.
- 1 year sabbatical at the University of Bristol (UK), 2004-05. Department of Aerospace Engineering (Prof. M.R. Wisnom).

Student exchange management

- Director of ENSAM double degree programme with the UK (MSc level) at the national level. 35 final year students sent each year to MSc courses in the UK (Imperial College, Bristol, Cranfield etc.)
- Broad experience of undergraduate student exchanges (ERASMUS/SOCRATES, UK, USA, Germany etc.), first at Ecole des Mines, then at ENSAM.
- From 2006 onward: management of the final year project abroad of 16 students per year within the ReDI final year course (see Part 5 – Teaching proposals and <http://www.chalons.ensam.fr/FITE-3A/ReDI/redi2.htm>). All students placed worldwide using my own research contacts.

Teaching

- Participation as lecturer to the ERASMUS ICP-93-B1040/06 intensive course entitled “Analysis, Design, Manufacturing and Testing of a Composite Structural Component” (1 week). Course held at the University of Kaiserslautern in 1995 and 1996 and organized by me in 1997 in St-Etienne. Exercises on classical lamination theory and project on prediction of composite failure.
- Participation to a BSSM intensive course on experimental mechanics, 22-26 March 2010 at the University of Southampton, UK. Lectures on optics, grid method, interferometry, smoothing and strain calculations and data processing with the virtual fields method. Practical lab on the grid method and practical full-field data processing. 20 students at PhD level. 2011 edition in April at Southampton University.

Research

- Wide range of international research collaborations (Bristol, Loughborough and Southampton Universities, UK, University of South Carolina, USA, UTAD University in Vila Real, Portugal, Aalborg University, Denmark, etc.), including formal collaborations through EPSRC funded contracts (UK) and joint publications.
- International training courses on the Virtual Fields Method
 - One day course at the annual SEM conference since 2005 (fourth edition of the course to be delivered in June 2008 in Orlando, see <http://www.sem.org/CONF-AC-TOP.asp>). About 15 participants each year.

- Two-day course at Loughborough University, organized by BSSM (British Society for Strain Measurements), June 2006. 10 participants.
- One day course at the next Photomechanics conference in Loughborough, July 2008, <http://www.lboro.ac.uk/departments/mm/conferences/photomechanics/>
- One day course at the University of Ancona (Italy), 21st January 2009.
- Specific training of PhD candidates to transfer the Virtual Fields Method:
 - Mr Pavel Sztefek, Imperial College, in relation with the EPSRC grant <http://gow.epsrc.ac.uk/ViewGrant.aspx?GrantRef=EP/C531590/1> (Dr Robin Olsson)
 - Mr Samuel Blanchard, ONERA Lille, France (PhD candidate)
 - Mr Adam Pickard, Bristol University, UK (Prof. M. Wisnom)
 - Mr Peng Wang, Aalborg University, Denmark (Prof. Thomsen)

Conferences, networking etc.

Conferences

▪ Conference chair

- CompTest conferences

I initiated this cycle of conferences with the help of Professor M.R. Wisnom with the objective of providing an international forum for discussing the link between modelling and testing of composites. This focused conference typically attracts between 100 and 150 participants from more than 15 countries.

- Co-Chairman and organizer of the first “Composites Testing and Model Identification” (CompTest2003) conference held in January 2003 in Châlons en Champagne (France) Invited editor for a CompTest2003 special issue of the journal “Composites Part A” (vol. 35A, n° 7-8, 2004). <http://www.camfit.fr/comptest2003/>
 - Co-Chairman of the “Composites Testing and Model Identification” (CompTest2004) conference held in September 2004 in Bristol (UK) – 140 participants from 25 countries. <http://www.aero.bris.ac.uk/comptest2004/>
 - Co-Chairman of the “Composites Testing and Model Identification” (CompTest2006) conference held in April 2006 in Porto (Portugal). <http://paginas.fe.up.pt/comptest2006/>
 - Co-Chairman of the “Composites Testing and Model Identification” (CompTest2008) conference held in October 2008 in Dayton (Ohio, USA). <http://academic.udayton.edu/stevendonaldson/comptest2008.html>
 - Co-Chairman of the “Composites Testing and Model Identification” (CompTest2011) conference to be held in 14-16 February at EPFL in Lausanne, Switzerland. <http://comptest2011.epfl.ch/>
 - Co-chair of the organising committee of the national meeting of the university mechanics association (AUM), 31 August to 1 September 2000 in Troyes.
 - Co-chair of the organizing committee of the French Conference on Mechanics (1200 participants) held in Troyes in September 2005. <http://www-cfm2005.utt.fr/>
 - Chair of the scientific committee of the International Conference in Experimental Mechanics (ICEM16, conference of the EURASEM, www.eurasem.org) to be held in July 2014 in Cambridge, UK
- #### ▪ Participation to conference organization
- JNC9: French National composites conference, 22-24 November 1994 in St-Etienne, France.

- EUROMECH 360 colloquium “Mechanics of Sandwich Structures”, 13-15 May 1997 in St-Etienne, France
- "Synergy2001: design chain - integrated manufacturing of composites: overview of the needs and relations between university and industry", 17 January 2001, Troyes University of Technology.
- Member of the organizing committee of the 7th BSSM International Conference on Advances in Experimental Mechanics, 7-9 September 2010 in Liverpool, UK.

- **Session organization**
 - 4th EUROMECH conference on solid mechanics, 26-30 June 2000 in Metz (9 communications).
 - Xth SEM (Society for Experimental Mechanics) international congress on experimental mechanics, 7-10 June 2004 in Costa Mesa, California, USA. Sessions on inverse problems in experimental mechanics (18 communications).
 - Annual SEM conference, 7-9 June 2005 in Portland, Oregon, USA (18 communications).
 - 17th French Mechanics Conference. Co-organiser with Professor Michel Grédiac and Professor François Hild of a mini-symposium entitled "full-field measurements and identification in solid mechanics" (26 communications), and participation to the reviewing process of the session "experimental mechanics of materials and structures" organised by Professor Alain Vautrin.
 - Annual SEM conference, 4-7 June 2006 in Saint-Louis, Missouri, USA. Sessions on inverse problems in experimental mechanics (30 communications).
 - Annual SEM conference, 4-7 June 2007 in Springfield, Massachusetts, USA. Track on inverse problems in experimental mechanics (16 communications).
 - ICEM13 (International Conference on Experimental Mechanics), 1-6 June 2007 in Alexandroupolis, Greece. Session entitled "identification of mechanical constitutive equations from kinematic full-field measurements" and jointly organised with Professor Michel Grédiac and Professor P. Stähle (Malmö University) – 9 communications.
 - XIth SEM international congress on experimental mechanics, 2-5 June 2008 in Orlando, Florida, USA. Sessions on inverse problems in experimental mechanics (10 communications) and high speed full-field measurement (10 communications).
 - ICCM17 (17th International Conference on Composite Materials), 27 to 31 July 2009 in Edinburgh. Session on “Full-field measurements for composite materials” (with Prof. J. Barton and Dr Y. Rajapakse). 20 communications.
 - SEM 2010 annual conference in Indianapolis: organisation (with Prof. M.A. Sutton) of a track entitled “Application of imaging techniques to mechanics of materials and structures”. 60 communications.
 - SEM 2011 annual conference in June in Mohegan Sun (CT): organisation (with Prof. J. Barton) of a track entitled “Thermomechanics and infrared imaging of materials and structures”. 30 communications.

- **Scientific committees**
 - National conferences (some examples)
 - Scientific seminar entitled "identification of the mechanical properties of materials and structures from full-field measurements", sponsored by the French mechanics association (AFM) and organised by Professor Michel Grédiac in Clermont-Ferrand, 29 April 2002.
 - Photomécanique 2004 conference, 4-6 May in Albi.

- 17th French mechanics conference, 29 August to 2 September 2005, Troyes, France.
- International conferences (some examples)
 - 6th "Deformation and Fracture of Composites" (DFC6) conference, 4-5 April 2001 in Manchester (UK).
 - Annual conference of the British Society for Strain Measurement (BSSM), 6-8 September 2005 in Southampton (UK).
 - Photomechanics 2006 conference, 10-12 July 2006 in Clermont-Ferrand
 - 13th International Conference on Experimental Mechanics (ICEM13), 1-6 July 2007 in Alexandroupolis, Greece.
 - Composites 2007, ECCOMAS conference, 12-14 September 2007 in Porto, Portugal. <http://paginas.fe.up.pt/~comp2007/>
 - Photomechanics 2008 conference, 7-9th February 2010 in Loughborough (UK)
 - 17th International conference on composite materials (ICCM17), 27-31 July 2010 In Edinburgh.
 - 14th International Conference on Experimental Mechanics (ICEM14), 4-9 July 2010 in Poitiers, France.
 - Photomechanics 2011 conference, 7-9th July 2011 in Brussels, Belgium.
 - 18th International conference on composite materials (ICCM18), 21-26 August 2011 in Jeju Island (South Korea).

Workshops

- Chairman of the BSSM (British Society for Strain Measurements, www.bssm.org) workshop on "Experimental mechanics in biological tissues", 23rd June 2009 in Loughborough, UK.
- Co-chairman of the BSSM (British Society for Strain Measurements, www.bssm.org) workshop on "New Approaches for Performance Definition of Composite Materials and Structures, 11 March 2010 at NPL in Teddington, UK.

Invited research seminars (national)

- Seminars on the Virtual Fields Method
 - 29th November 2001, INSA Rouen (Prof. Edoardo Souza)
 - 21st March 2001, ENSAM Paris (Prof. Jacques Verdu)
 - 10th November 2005, University of Technology of Compiègne (Prof. Pierre Villon)
 - 15th June 2006, ONERA Lille
 - 2nd April 2008, ONERA Châtillon
 - 24th February 2011, Ecole Centrale de Nantes

Invited research seminars (international)

- The virtual fields method: a tool to measure material properties from full-field measurements and heterogeneous strain fields
 - The Open University (UK), 9th December 2004 (Dr Salih Güngör).
 - Loughborough University (UK), 14th December 2004 (Prof. Jon Huntley)
 - Southampton University (UK), 16th December 2004 (Prof. Janice Barton)
 - Sheffield University (UK), 2nd March 2005 (Prof. Costas Soutis)
 - Reading University (UK), 23rd June 2005 (Prof. George Jeronimidis)
 - EPFL (CH), 23rd June 2006 (Prof. John Botsis)
 - University of Glasgow (UK), November 2008 (Prof. Margaret Lucas)
 - University of Cardiff (UK), September 2009 (Prof. Karen Holford)
 - University of South Carolina (USA), February 2010 (Prof. Mike Sutton)
 - University of Texas at Arlington (USA), February 2010 (Prof. Erian Armanios)

- University of Exeter (UK), March 2010 (Dr Chris Smith)
- Oxford University (UK), May 2010 (Dr Clive Siviour)
- Aalborg University (DE), 19th January 2011 (Prof. O.T. Thomsen)

Affiliation to Societies

- Member of the French Society for Composite Materials (AMAC)
- Member of the French Society for the Mechanics of Materials (MECAMAT)
- Member of the French Mechanics Society (AFM)
 - Secretary of the AFM group, 2001-2003
- Member of the British Society for Strain Measurement (BSSM)
 - Co-opted as member of the National Technical Committee (NATCO), 2006-
 - Member of the SATCO committee (workshop and seminars), 2009-
- Member of the Society for Experimental Mechanics (SEM)
 - President of the Technical Division entitled “Inverse Problem Approaches” (2007-2009)
 - Member of the Executive Board (2009-)
- Member of the Council of EuraSEM (European Society for Experimental Mechanics), website manager and newsletter editor.
- Member of the Institute of Physics (IOP, UK)

Journal editing

- **Editor-in-Chief, Strain (Wiley-Blackwell), July 2010 -**
- Associate Technical Editor for Experimental Mechanics, Springer (2009-)
- Associate Technical Editor for Mécanique & Industries, EDP Sciences (2009- 2010)
- Member of the Editorial Council of the international journal “Strain” (Blackwell Publishing). Composed of 5 academics, it helps the Editor-in-Chief with strategic issues. About two meetings per year (2007-2010)
- Member of the Editorial Board of the international journal “Strain” (Blackwell Publishing). About two meetings per year (2005-)
- Guest editor for the CompTest2003 (vol. 35, n° 7-8, 2004), CompTest2004 (vol. 37, n° 2, 2006) and CompTest2008 (vol. 40, n° 12, 2009) special issues of the journal “Composites Part A” (Elsevier).
- Guest editor (with Y.-L. Lo, Taiwan) for a special issue of Experimental Mechanics (Springer) on Inverse problems in experimental mechanics (vol. 48, n° 4, 2008).
- Guest editor for a special issue of Composites Part A (Elsevier) on full-field measurements applied to composites (vol. 39, n° 8, 2008).

Reviewing

- Regular reviewer for Composites Science and Technology, Composites Part A, International Journal of Solids and Structures (Elsevier), Journal of Composite Materials (Sage), Experimental Mechanics (Springer), Strain (Blackwell Publishing), Engineering Fracture Mechanics, Journal of Strain Analysis for Engineering Design, etc. Presently, yearly work load of about 10 reviews.

Publications

International refereed journals with impact factor: 65 publications
h-index: 19 (Scopus, January 2011)

Books/chapters of books: 3 contributions

International refereed journals without impact factor: 1 publication

National refereed journals: 9 publications

Editorials in international refereed journals: 7 editorials

Invited lectures (conferences and workshops): 12

International conferences with proceedings: 107 publications

National conferences with proceedings: 45 publications

Conferences without proceedings: 40 communications

Miscellaneous: 3 documents

Hobbies

- Classical guitar (10 years of study).
- Literature (particularly British, French and American authors).
- Volley-ball, Chess.

List of publications

Overview

International refereed journals with impact factor: 65 publications
h-index: 19 (Scopus, January 2011)

Books/chapters of books: 3 contributions

International refereed journals without impact factor: 1 publication

National refereed journals: 9 publications

Editorials in international refereed journals: 7 editorials

Invited lectures (conferences and workshops): 12

International conferences with proceedings: 107 publications

National conferences with proceedings: 45 publications

Conferences without proceedings: 40 communications

Miscellaneous: 3 documents

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3. Pierron F., Vautrin A., Harris B., The Iosipescu in-plane shear test: validation on an isotropic material, *Experimental Mechanics*, vol. 35, n° 2, pp 130-136, 1995. <http://dx.doi.org/10.1007/BF02326470>

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4. Pierron F., Vautrin A., The 10° off-axis tensile test: a critical approach, *Composites Science and Technology*, vol. 56, n° 4, pp 483-488, 1996. [http://dx.doi.org/10.1016/0266-3538\(96\)00004-8](http://dx.doi.org/10.1016/0266-3538(96)00004-8)

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5. Pierron F., Vautrin A., Measurement of the in-plane shear strength of unidirectional composites with the Iosipescu test, *Composites Science and Technology*, vol. 57, n° 12, pp 1653-1660, 1997. [http://dx.doi.org/10.1016/S0266-3538\(97\)00099-7](http://dx.doi.org/10.1016/S0266-3538(97)00099-7)
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1	<input type="checkbox"/> Sensitivity of the virtual fields method to noisy data View at publisher Show abstract	Avril, S., Grédiac, M., Pierron, F.	2004	<i>Computational Mechanics</i> 34 (6), pp. 439-452	59
2	<input type="checkbox"/> Special virtual fields for the direct determination of material parameters with the virtual fields methods. 1 - Principle and definition View at publisher Show abstract	Grédiac, M., Toussaint, E., Pierron, F.	2002	<i>International Journal of Solids and Structures</i> 39 (10), pp. 2691-2705	57
3	<input type="checkbox"/> Numerical and experimental study of woven composite pin-joints View at publisher Show abstract	Pierron, F., Cersier, F., Grédiac, M.	2000	<i>Journal of Composite Materials</i> 34 (12), pp. 1028-1054	42
4	<input type="checkbox"/> General framework for the identification of constitutive parameters from full-field measurements in linear elasticity View at publisher Show abstract	Avril, S., Pierron, F.	2007	<i>International Journal of Solids and Structures</i> 44 (14-15), pp. 4978-5002	38
5	<input type="checkbox"/> Special virtual fields for the direct determination of material parameters with the virtual fields method. 2 - Application to in-plane properties View at publisher Show abstract	Grédiac, M., Toussaint, E., Pierron, F.	2002	<i>International Journal of Solids and Structures</i> 39 (10), pp. 2707-2730	37
6	<input type="checkbox"/> The virtual fields method for extracting constitutive parameters from full-field measurements: A review View at publisher Show abstract	Grédiac, M., Pierron, F., Avril, S., Toussaint, E.	2006	<i>Strain</i> 42 (4), pp. 233-253	35
7	<input type="checkbox"/> Applying the Virtual Fields Method to the identification of elasto-plastic constitutive parameters View at publisher Show abstract	Grédiac, M., Pierron, F.	2006	<i>International Journal of Plasticity</i> 22 (4), pp. 602-627	34
8	<input type="checkbox"/> Overview of identification methods of mechanical parameters based on full-field measurements View at publisher Show abstract	Avril, S., Bonnet, M., Bretelle, A.-S., Grédiac, M., Hild, F., Jenny, P., Latourte, F., (C.), Pierron, F.	2008	<i>Experimental Mechanics</i> 48 (4), pp. 381-402	28
9	<input type="checkbox"/> Special virtual fields for the direct determination of material parameters with the virtual fields method. 3. Application to the bending rigidities of anisotropic plates View at publisher Show abstract	Grédiac, M., Toussaint, E., Pierron, F.	2003	<i>International Journal of Solids and Structures</i> 40 (10), pp. 2401-2419	28
10	<input type="checkbox"/> Novel procedure for complete in-plane composite characterization using a single T-shaped specimen View at publisher Show abstract	Grédiac, M., Pierron, F., Surrel, Y.	1999	<i>Experimental Mechanics</i> 39 (2), pp. 142-149	28
11	<input type="checkbox"/> Whole-field assessment of the effects of boundary conditions on the strain field in off-axis tensile testing of unidirectional composites View at publisher Show abstract	Pierron, F., Alloua, E., Sunel, Y., Vautrin, A.	1998	<i>Composites Science and Technology</i> 58 (12), pp. 1939-1947	28
12	<input type="checkbox"/> Measurement of the in-plane shear strengths of unidirectional composites with the Iosipescu test View at publisher Show abstract	Pierron, F., Vautrin, A.	1998	<i>Composites Science and Technology</i> 57 (12), pp. 1653-1660	28
13	<input type="checkbox"/> Identification of the through-thickness moduli of thick composites from whole-field measurements using the Iosipescu fixture: theory and simulations View at publisher Show abstract	Pierron, F., Grédiac, M.	2000	<i>Composites Part A: Applied Science and Manufacturing</i> 31 (4), pp. 309-318	25
14	<input type="checkbox"/> The 10° off-axis tensile test: A critical approach View at publisher Show abstract	Pierron, F., Vautrin, A.	1996	<i>Composites Science and Technology</i> 56 (4), pp. 483-488	25
15	<input type="checkbox"/> A T-shaped specimen for the direct characterization of orthotropic materials View at publisher Show abstract	Grédiac, M., Pierron, F.	1998	<i>International Journal for Numerical Methods in Engineering</i> 41 (2), pp. 293-309	23

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2. Grédiac M., Pierron F., Avril S., Toussaint E., Méthode des champs virtuels, *Traité MIM*, F. Hild et M. Grédiac editors, EDP Sciences, 2011, In press. In French.
3. Pierron F., Grédiac M., The Virtual Fields Method: Extracting constitutive mechanical parameters from full-field deformation measurements, Springer New-York, underway, final draft target: June 2011.

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1. Avril S., Feissel P., Pierron F., Villon P., Estimation of the strain field from full-field displacement noisy data: comparing finite element global least squares and polynomial diffuse approximation, *European Journal of Computational Mechanics*, vol. 17, n° 5-7, pp. 857-868, 2008.

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1. Pierron F., Wisnom M., CompTest2003, *Composites Part A: Applied Science and Manufacturing*, vol. 35, n° 7-8, pp. 749-750, 2004.
2. Pierron F., Editorial, *Strain*, vol. 41, n° 4, pp. 133-134, 2005.
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1. Pierron F., L'essai de cisaillement plan d'Iosipescu : mesure des déformations, journée AMAC spécialisée sur l'extensométrie, 11 janvier à Saint-Étienne, paru dans les *Annales des Composites*, n° 3, pp 5-14, 1993.
2. Ghidossi P., El Mansori M., Pierron F., Influence de la découpe d'éprouvettes en composite sur leur tenue mécanique, *Mécanique et Industries*, vol. 3, pp. 361-78, 2002.
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9. Pierron F., Guo B., Rotinat R., Méthodologie d'identification du comportement mécanique des mousses hyperélastiques par mesures de champs et méthode inverse, *Mécanique et Industries*, vol. 10, pp. 55-59, 2009.

Invited and keynote lectures at national and international conferences

1. Pierron F., The Virtual Fields Method: a tool for processing full-field measurements for mechanical parameter identification from heterogeneous tests, Proceedings of the European Symposium on Wood Mechanics 2004, 7-9 September 2004 in Vila Real (Portugal). Plenary lecture.
2. Pierron F., Identification of materials mechanical properties from full-field measurements: latest advances in the Virtual Fields Method, 6th BSSM International Conference on Advances in Experimental Mechanics, 9-11 September 2008 in Teddington (UK). Plenary lecture.
3. Pierron F., Full-field measurements for material characterization using the virtual fields method, XXXVII Convegno Nazionale dell'Associazione Italiana per l'Analisi delle Sollecitazioni (AIAS), Rome, 10-13 September 2008. Plenary lecture.
4. Pierron F., Application of full-field measurements and inverse identification to composite materials, 17th International Conference on Composite Materials (ICCM17), 27-31 July 2009 in Edinburgh (UK).
5. Pierron F., Identification of dynamic mechanical properties of materials using imaging techniques, 2009 SEM (Society for Experimental Mechanics) Fall conference, 5-7 October 2009 in Columbia, SC, USA.
6. Pierron F., Moulart R., Hallett S., Wisnom M., Identification of elastic stiffnesses of composites from full-field measurements using a ultra high speed camera, keynote lecture, Dymat technical meeting, 1-3 December 2010 in Strasbourg, France.

Invited lectures at workshops

1. Pierron F., Applications of full-field optical techniques to the measurement of materials mechanical properties, "Industrial applications of optical methods for shape, deformation and strain measurement", seminar organized by the "British Society for Strain Measurements" (BSSM), 4 November 2004 in Bristol (UK).
2. Pierron F., Mechanical identification from full-field measurements: general introduction and application to wood, seminar of the COST E35 "Fracture mechanics and micromechanics of wood and wood composites with regard to wood machining", 29-30 September 2005 in Rosenheim (Germany).
3. Pierron F., Analysis of full-field measurements for material parameter determination by the Virtual Fields Method, "Measuring with Vision: Developments and Innovations in Optical Metrology for Engineering", seminar organized by the "British Society for Strain Measurements" (BSSM), 3 May 2007 in Bristol (UK).
4. Maquin F., Pierron F., Heat dissipation in metals loaded below their macroscopic elastic limit, "Thermal Techniques for Non-Destructive Evaluation & Stress Analysis", seminar organized by the "British Society for Strain Measurements" (BSSM), 30 January 2008 in Southampton (UK).
5. Pierron F., Ultra high speed full field measurements for Hopkinson bar, seminar "New approaches for performance definition of composites materials and structures" of the "British Society for Strain Measurements" (BSSM), 11 March 2010 in Teddington (UK).
6. Pierron F., Examples of the use of ultra high speed cameras for full-field strain measurements in high strain rate testing, High speed imaging showcase, event organized by the "British Society for Strain Measurements" (BSSM), 23 November 2010 in Teddington (UK).

International conferences with proceedings

1. Pierron F., Vautrin A., Accurate evaluation of the Iosipescu in-plane shear test for measuring the shear modulus of laminated composites, proceedings of ECCM-CTS-2 (European Conference on Composite Materials: Testing and Standardization), 13-15 September in Hamburg (Germany), pp 295-303, 1994.
2. Grédiac M., Pierron F., Surrel Y., Vautrin A., Measure of the in-plane shear modulus of composites from heterogeneous kinematic fields, proceedings of International Symposium on Inverse Problems (ISIP'94), 2-4 November in Paris (France), pp 131-136, 1994.
3. Pierron F., Vautrin A., Analysis of the failure of unidirectional composites, proceedings of ECCM7 (CTS3), Seventh European Conference on Composite Materials – Testing and Standardisation 3, 14-16 May in London (UK), pp 183-188, 1996.
4. Pierron F., Vautrin A., A new methodology for composites shear strength measurement using the 10° off-axis tensile test, proceedings of ECCM7 (CTS3), Seventh European Conference on Composite Materials – Testing and Standardisation 3, 14-16 May in London (UK), pp 119-124, 1996.
5. Cerisier F., Grédiac M., Pierron F., Vautrin A., Design of a locomotive transmission in composite materials, proceedings of ESDA'96 (third biennial joint conference on engineering systems design and analysis), 1996.
6. Pierron F., Vautrin A., Measurement of the in-plane shear strength of unidirectional composites: a review, proceedings of BMC-5 (Fifth international symposium on brittle matrix composites), 13-15 October in Warsaw (Poland), pp 440-449, 1997.
7. Pierron F., Grédiac M., Direct identification of an in-plane orthotropic law from a single test, proceedings of International Symposium on Inverse Problems (ISIP'98), 24-27 March in Nagano (Japan), pp 215-224, 1998.
8. Pierron F., Grédiac M., Surrel Y., A T-shaped specimen for the direct identification of the in-plane moduli of orthotropic composites, proceedings of ICEM 11 (11th International Conference on Experimental Mechanics), 24-28 August in Oxford (UK), 1998.
9. Pierron F., Davies P., Ring compression test for tubular composite mechanical characterization, proceedings of ECCM-CTS-4 (European Conference on Composite Materials: Testing and Standardization), 31 August to 2 September in Lisbon (Portugal), pp 193-202, 1998.
10. Pierron F., Experimental evidence of Saint-Venant effects in composite testing, proceedings of ECCM-CTS-4 (European Conference on Composite Materials: Testing and Standardization), 31 August to 2 September in Lisbon (Portugal), pp 47-56, 1998.
11. Poirette Y., Pierron F., Vautrin A., Contribution to the durability analysis of a thick composite structure under complex mechanical and hygroscopic loads, proceedings of DURACOSYS99, 1999.
12. Pierron F., Grédiac M., Experimental identification of orthotropic in-plane elastic properties using whole-field optical measurements and the virtual fields method, proceedings of Video-controlled materials testing, 16-18 November in Nancy (France), 1999.
13. Pierron F., Cerisier F., Grédiac M., Numerical modelling of composite pin-joints and experimental validation, proceedings of 12th International Conference on Composite Materials ICCM12, 5-11 July in Paris (France), 1999.
14. Grédiac M., Pierron F., Surrel Y., Vautrin A., Mechanical identification of anisotropic properties of composites, proceedings of 12th International Conference on Composite Materials ICCM12, 5-11 July in Paris (France), 1999.
15. Pierron F., Zhavoronok, Grédiac M., Identification of the through-thickness stiffnesses of thick laminates by inverse analysis, proceedings of 12th International Conference on Composite Materials ICCM12, 5-11 July in Paris (France), 1999.

16. Pierron F., Grédiac M., The virtual fields method applied to a Iosipescu-like specimen, proceedings of IXth SEM International Congress on Experimental Mechanics (CD-ROM), 5 to 9 June in Orlando (USA), 2000.
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31. Giraudeau A., Pierron F., Simultaneous identification of anisotropic stiffness and damping properties of composite plates from forced bending vibrations, Annual SEM conference (Society for Experimental Mechanics), 2-4 June in Charlotte (North Carolina, USA), 2003.
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