International Conference

on

Residual Stresses

ICRS-11

27th to 30th March 2022

organised by

SF2M
Société Française
de Métallurgie et de Matériaux

INSTITUT
JEAN LAMOUR

at

Centre Prouvé – Nancy France

Table of Content

Foreword

The 11th International Conference on Residual Stresses is the continuation of the successful series initiated in Garmisch-Partenkirchen (Germany, 1986) and continued in Nancy (France, 1988), Tokushima (Japan, 1991), Baltimore (USA, 1994), Linkoping (Sweden, 1997), Oxford (UK, 2000), Xi'an (China, 2004), Denver (USA, 2008), Garmisch-Partenkirchen (Germany, 2012) and Sydney (Australia, 2016). ICRS11 should have taken place in 2020, but due to the COVID pandemic the International Scientific Board of ICRS conferences decided to postpone it to 2022.

The conference provides a key forum for scientists, students, and engineers interested in the prediction, evaluation, control, and application of residual stresses to discuss the state of the art from both theoretical and applied viewpoints. Equal emphasis is given to the measurement, modelling, and utilization of residual stress/strain data. Both the scientific and engineering aspects of these topics, such as the influence of residual stress fields on distortion, material response to loading, damage initiation and propagation, component performance, life and failure, will be addressed. Special attention is paid to method development and burning issues of great current interest, as stresses in nanosized systems, stress analysis using synchrotron radiation, stresses in additive manufacturing, multiscale approaches ...

The program of the conference is built around six scientific sessions, 3 plenary lectures, 12 keynote lectures, 80 oral presentations and a dedicated poster session with 75 posters. To facilitate the access to the event, an hybrid solution, in presence and remotely, has been chosen. We wait for more than 200 attendees from 25 countries. Full papers will be reviewed and published in open access (collection "ICRS11" open archive HAL). In parallel to the scientific conferences, an exhibition of scientific and technical instruments with 11 exhibitors is organized.

The conference is organized by SF2M and Institut Jean Lamour, supported by Université de Lorraine, CNRS, Labex DAMAS, RNM and Metropole du Grand Nancy and sponsored by Safran. The financial and technical support of these institutions and societies is greatly acknowledged.

On behalf of the Organizing Committee

Sabine DENIS and Guillaume GEANDIER

Practical information

Nancy

Constantly evolving, Nancy charms visitors with its diverse features.

Nancy is a stunning town, combining Renaissance, Art Nouveau and Art Deco styles. For a journey back in time, head to the Old Town where its remarkable sites, like the Lorraine Museum, will transport history buffs. Just near Place Stanislas, Pépinière Park stands like a green paradise. Nancy is an ideal destination for a gourmet city break or a shopping holiday, surprising visitors with its diverse cultural calendar, including the traditional Saint Nicholas festival.

Conference Location:

Conference will take place entirely at the "Prouvé Convention Center" located in the city center, a 1-minute walk from the Nancy TGV station and the public transport platform.

Centre Prouvé - Nancy

The "Prouvé Convention Center", is first of all the successful refurbishing of a local flagship building. It once was the mail sorting center, built in the 1970's by architects Jacques André and Claude Prouvé.

Located 95 mins away from Paris, it is a strong asset of the Grand Nancy Council's attractivity. The "Université de Lorraine", the "Centre Hospitalier Régional Universitaire", the prestigious research laboratories, and the 3 cluster, position Nancy as a dynamic and attractive destination to host Conventions of innovative sectors that have characterized the territory for years.

Also, being 1min away from the train station, the "Prouvé Convention Center" offers walking access within 10 minutes to nearly 1500 rooms and touristic sites. This state of the art equipment has a 600m^2 exhibition hall & a 2400 m^2 hall that can hold up to 2400 seats, 2 auditoriums (850 and 300 seats), 13 meeting rooms equipped with instant translation cabins.

credit: DESTINATION NANCY / Nicolas Dohr

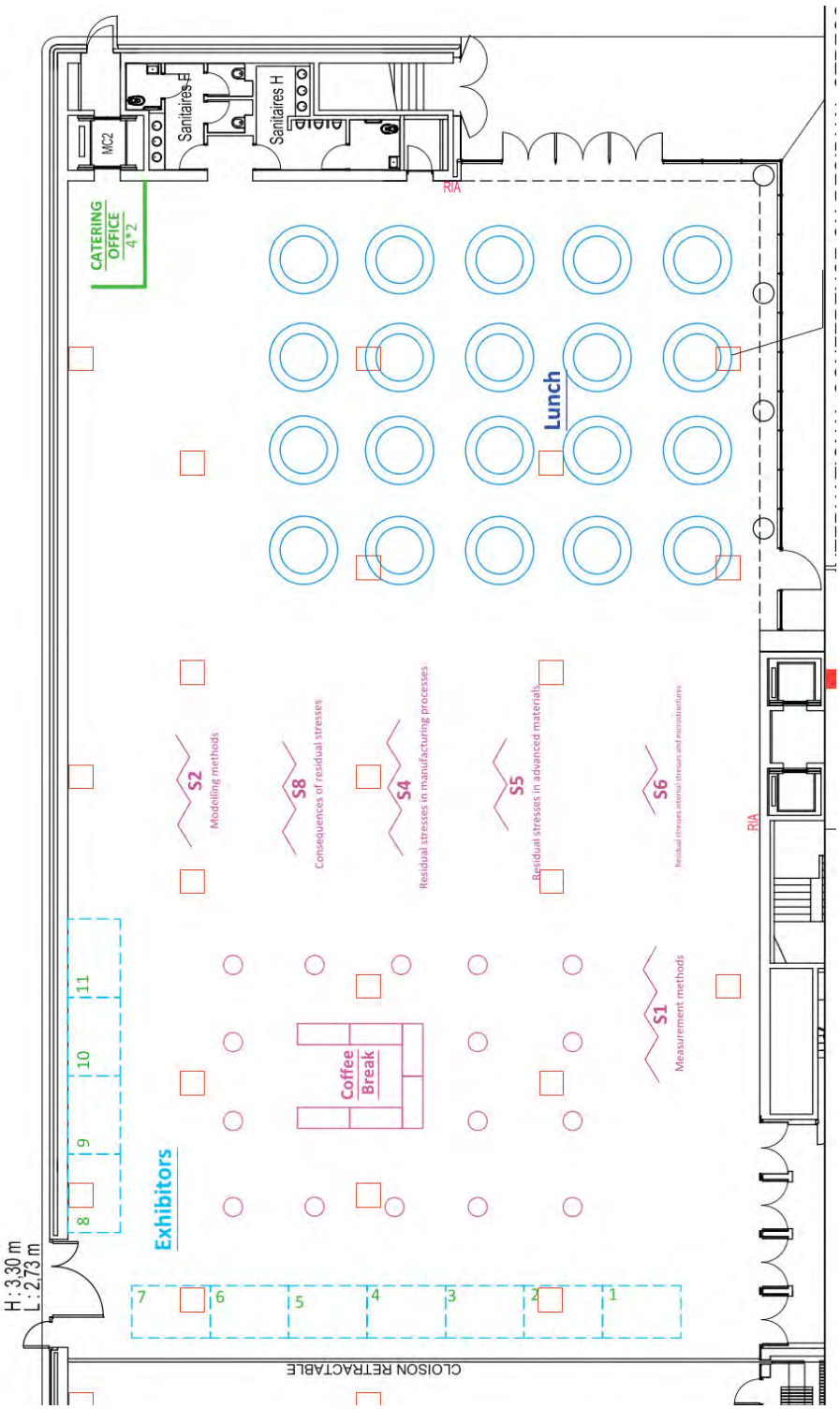
And with a panoramic reception area allowing for up to 1200 dining guests and a 455 car parks underground public parking, it could be the ideal place for hosting your next event.

https://www.nancy-tourisme.fr/en/

Contact regarding the organization of the conference:
SF2M
Société Française de Métallurgie et de Matériaux
28 rue Saint Dominique – 75007 Paris, France
Tél. : +33(0)1 46 33 08 00
Email: secretariat@sf2m.fr
https://sf2m.fr/

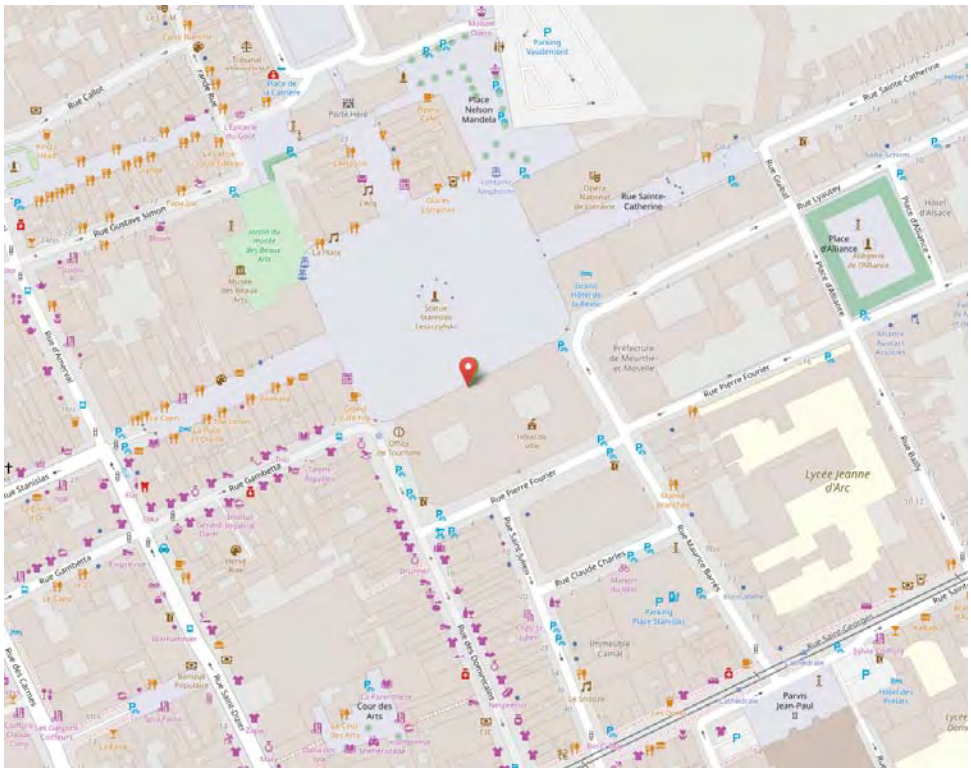
Inside Jean Prouvé Convention Center

Oral sessions will take place in the Auditorium 300 and room 103.
Exhibitions, posters, coffee breaks and lunches will take place in Hall 1.

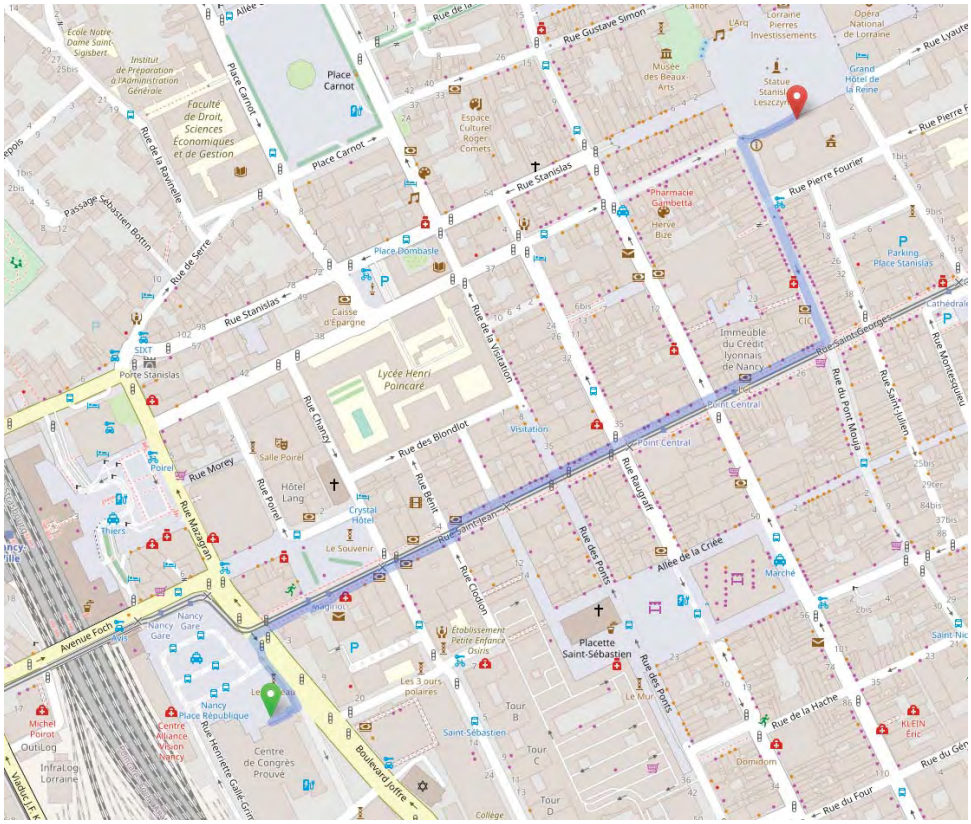


Gala dinner

The gala dinner will take place at Nancy Town Hall:



How to get there by foot: Distance: 961m. Time: 0:13.



Health instructions

Together against Covid-19

Wash your hands regularly or use a hydro-alcoholic solution

Coughing or sneezing into your elbow or tissue

Blow your nose in a disposable tissue and then throw it away

Wear a mask when the distance of one meter cannot be respected and wherever it is mandatory

Respect a distance of at least two meters from others

Limit your social contacts as much as possible

Avoid touching your face

Ventilate rooms 10 minutes, three times a day

Greet without shaking hands and stop kissing

https://www.diplomatie.gouv.fr/en/coming-to-france/coming-to-france-your-covid-19-questions-answered/

Wearing a mask is highly recommended during the conference.

Prepare your trip before / after the conference:

Covid 19 : International travel information:
https://www.interieur.gouv.fr/covid-19-international-travel

To make a PCR test before your flight:
It is necessary to make an appointment online in advance :
https://www.lorraine.synlab.fr/Laboratoire/
go to : RDV Covid-19.
At this stage, a window allows you to change the language and have the entire questionnaire in English. The cost is 44 €.
The Synlab Group has diverse laboratories around Nancy :
https://www.lorraine.synlab.fr/Laboratoire/NousConnaitre/NosLaboratoires.aspx

Committees

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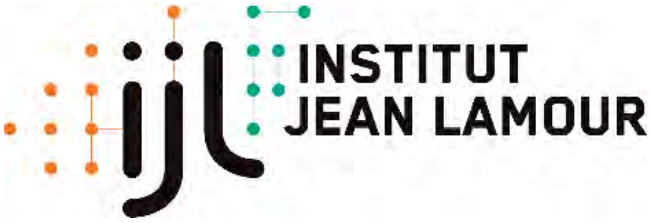
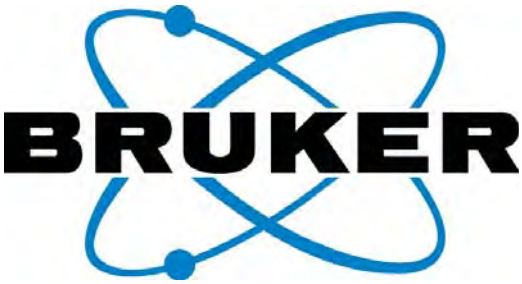


Sponsors

Exhibitors



https://www.bruker.com/en/landingpages/baxs/x-ray-structural-and-elemental-analysis.html

https://www.easi-stress.eu/

https://sonats-et.com/en/

https://www.gnr.it/

http://mrxrays.com/en/

https://nntlab.com/en/

https://www.pulstec.co.jp/en/

www.sintechnology.com
www.mts3000.com

https://www.protoxrd.com/

https://www.stresstech.com/

https://www.veqter.co.uk/

Schedule Sunday 27^{th} March

17h00–21h00	Registration at Prouvé Convention Center

ICRS-11 – Time table

Monday March 28th

	Auditorium 300	Room 103
8h30	welcome	
9h00	Plenary	
9h55	A – keynote	B – keynote
10h20	A – oral	B – oral
10h40	A – oral	B – oral
11h00	Coffee break	
11hh20	A – oral	B – oral
11h40	A – oral	B – oral
12h00	A – oral	B – oral
12h20	Lunch	
13h45	C – keynote	D – keynote
14h10	C – oral	D – oral
14h30	C – oral	D – oral
14h50	C – oral	D – oral
15h10	C – oral	D – oral
15h30	C – oral	D – oral
15h50	C – oral	D – oral
16h10	Coffee break	
16h30	A – oral	F – oral
16h50	A – oral	F – oral
17h10	A – oral	F – oral
17h30	A – oral	F – oral
17h50	A – oral	F – oral

Tuesday March 29th

	Auditorium 300	Room 103
8h30	Plenary	
9h25	C – keynote	D – keynote
09h50	C – oral	D – oral
10h10	C – oral	D – oral
10h30	C – oral	D – oral
10h50	Coffee break	
11h10	C – oral	A – oral
11h30	C – oral	A – oral
11h50	C – oral	A – oral
12h10	C – oral	A – oral
12h30	Lunch	
13h45	Poster session	
15h15	B – keynote	F – keynote
15h40	B – oral	F – oral
16h00	B – oral	F – oral
16h20	Coffee break	
16h40	A – oral	B – oral
17h00	A – oral	B – oral
17h20	A – oral	C – oral
17h40	A – oral	C – oral
19h00	Town Hall reception	
20h00	Gala dinner	

Wednesday March 30th

	Auditorium 300	Room 103
8h30	Plenary	
9h25	C – keynote	A – keynote
09h50	C – oral	A – oral
10h10	C – oral	F – oral
10h30	C – oral	F – oral
10h50	Coffee break	
11h10	C – oral	F – oral
11h30	C – oral	F – oral
11h50	C – oral	F – oral
12h10	C – oral	F – oral
12h30	Lunch	
13h45	A – keynote	E – keynote
14h10	A – oral	E – oral
14h30	A – oral	E – oral
14h50	A – oral	E – oral
15h10	A – oral	E – oral
15h30	Closing ceremony	

A: Measurement methods – B: Modelling methods – C: Residual stresses in manufacturing processes
D: Residual stresses in advanced materials – E: Residual stresses, Internal stresses and microstructures – F: Consequences of residual stresses

Sessions details

A – **Measurement methods**: diffraction methods, line profile analysis, magnetic methods, acoustic methods, photomechanical methods, mechanical and micromechanical methods ...

B – **Modelling methods**: at different scales (nano, micro, macroscales), multiscale modelling ...

C – **Residual stresses in manufacturing processes**: Heat treatments, Surface treatments (mechanical, , thermochemical,...), casting, additive technologies, machining, cutting, coating technologies, welding and other assembling methods, ...

D – **Residual stresses in advanced materials**: Polymer based composites, Metal and/or ceramic composites, glass and amorphous materials, Functionally Grades Materials, nanocrystallised/nanostructured materials, thin films, coatings, multilayers ...

E – **Residual stresses, Internal stresses and microstructures**: phase transformations, phase stresses, intergranular/intragranular stresses, dislocations ...

F – **Consequences of residual stresses**: Fatigue, crack propagation, damage, chemical reactivity, stress corrosion, physical properties of solids ...

Schedule Monday 28^{th} March
Auditorium – Morning sessions

08:00	Registration
08:30	Opening
09:00	Plenary talk :**Ismail C. Noyan** – Columbia University – New York – USA **Opportunities and Challenges in Diffraction Stress Analysis**
9:55	Keynote: A – **Yashar Javadi** – , University of Strathclyde – Glasgow – United Kingdom A - Yashar Javadi, Alistair Hutchison, Jonathan Singh, Ehsan Mohseni, Salaheddin Rahimi, Jorn Mehnen, Charles MacLeod, Gareth Pierce, Katherine Tant, Anthony Gachagan **Feasibility Study of Residual Stress Measurement Using Phased Array Ultrasonic Method**
10:20	A – **Abdellahi Abderahmane** – Université Paris-Saclay, CEA-LIST – Gif-sur-Yvette – France Abdellahi Abderahmane, Alain Lhémery, Laurent Daniel **An elastic guided wave tomographic method for multiaxial stress imaging**
10:40	A – **Jacob Kleiman** – SINTEC Inc. – Thornhill, ON – Canada Yuri Kudryavtsev, Jacob Kleiman **Ultrasonic Measurement of Residual Stresses in Welded Elements and Structures**
11:00	Coffee break
11:20	A – **Xingxing Zhang** – Technische Universität München – Garching – Germany Xingxing Zhang, Joana Rebelo Kornmeier, Michael Hofmann, Shadi Alameddin, Felix Fritzen, Anika Langebeck, Annika Bohlen **Residual stresses in laser-processed metal matrix composite coatings**
11:40	E – **Benoît Malard** – Université de Toulouse, CIRIMAT, CNRS/INPT/UPS – Toulouse – France Benoît Malard **Coupling high-energy synchrotron and finite element modeling to study shape memory alloy behavior at the grain scale**
12:00	A – **Samantha Veck** – The Open University – Milton Keynes – United Kingdom Samantha Veck, Foroogh Hosseinzadeh, P John Bouchard **Feasibility Study of Near Surface Residual Stress Field Reconstruction using Eigenstrain and Stress Function Methods**
12:20	Lunch

face-to-face presentation
Remote presentation

Schedule Monday 28th March
Auditorium – Afternoon sessions

13:45	Keynote: C – **Thomas Niendorf** – Universität Kassel – Kassel – Germany Thomas Niendorf, Behzad Aminforoughi, Sebastian Degener, Alexander Liehr **Determination of residual stresses in materials processed by additive manufacturing – challenges and consequences**
14:10	C – **Maximilian Sprengel** – Bundesanstalt für Materialforschung und -Prüfung (BAM) – Berlin – Germany Maximilian Sprengel, Gunther Mohr, Simon J. Altenburg, Alexander Evans, Itziar Serrano-Munoz, Arne Kromm, Thilo Pirling, Giovanni Bruno, Thomas Kannengiesser **Surface and bulk Residual Stress in Laser Powder Bed Fused 316L: Influence of Inter Layer Time and Scanning Velocity**
14:30	C – **Alexander Evans** – Bundesanstalt fuer Materialforschung und -prüfung (BAM) – Berlin – Germany Alexander Evans, Itziar Serrano-Munoz, Maximilian Sprengel, Tatiana Mishurova, Tobias Fritsch, Alexander Ulbricht, Jakob Schröder, Arne Kromm, Thomas Kannengiesser, Giovanni Bruno **Diffraction based residual stress analysis for metal additive manufacturing**
14:50	C – **Felix Schmeiser** – Technische Universität Berlin, Institute for Materials Science and Technology, Metallic Materials – Berlin – Germany Felix Schmeiser, Erwin Krohmer, Eckart Uhlmann, Walter Reimers **In situ stress analysis during laser powder bed fusion using synchrotron radiation diffraction**
15:10	C – **Prabhat Pant** – Linköping University – Linköping – Sweden Prabhat Pant, Vladimir Luzin, Sebastian Proper, Seyed Hosseini, Johan Moverare, Kjell Simonsson, Ru Lin Peng **Effect of re-melting strategies on the residual stresses in additively manufactured L-shaped IN718 parts**
15:30	C – **Maria José Marques** – University of Porto, Faculty of Engineering – Porto – Portugal Maria José Marques, A.C. Batista, J.P. Nobre, L. Coelho, A.M.P. de Jesus **Residual stresses evaluation by X-ray diffraction and incremental hole drilling in AISI 316L and AISI 18Ni300 samples produced by Selective Laser Melting**
15:50	C – **Halsey Ostergaard** – University of Sydney – Sydney – Australia Halsey Ostergaard, Anna Paradowska **In-situ and ex-situ neutron tools for probing residual stress and microstructure interactions during additive manufacturing and subsequent heat treatment**
16:10	Coffee break
16:30	A – **Andrzej Baczmanski** – AGH University of Science and Technology, WFiIS – Krakow – Poland Andrzej Baczmanski, Marianna Marciszko-Wiackowska, Adrian Oponowicz, Manuela Klaus, Christoph Genzel, Miroslaw Wrobel, Chedly Braham **Evolution of stresses and elastic properties below sample surface studied using X-ray diffraction**
16:50	A – **Elia Zgheib** – CIRIMAT – Toulouse – France Fabien Lefebvre, Simon Robbe, Eric Usmial, Elia Zgheib, Benoit Malard, Manuel François, Jean-Marie Le Roux, Nicolas Ratel-Ramond, Charles Mareau, Thierry Bergey, Edouard Daniel, Ewan Gautier, Guillaume Geandier **Material removal correction for residual stress analysis with X-ray diffraction**
17:10	A – **Chedly Braham** – PIMM, Arts et Metiers Institute of Technology – Paris – France Chedly Braham, Léo Morin, Pouya Tajdary, Gonzalo Gonzalez **A deconvolution method for the mapping of residual-stresses by X-ray diffraction**
17:30	A – **Elizabeth Sackett** – University of Limerick – Limerick – Ireland Elizabeth Sackett, Jeremy Robinson **Experimental validation of nanoindentation as a technique for rapid residual stress measurements on heat treatable aluminium alloys**
17:50	A – **Tommaso Grossi** – University of Pisa – Pisa – Italy Marco Beghini, Tommaso Grossi, Ciro Santus, Emilio Valentini **A calibration bench to validate systematic error compensation strategies in hole drilling measurements**

face-to-face presentation
Remote presentation

Schedule Monday 28^{th} March
ROOM 103 – Morning sessions

9:55	Keynote: B – **Regis Kubler** – Arts et Metiers Institute of Technology – Aix en Provence – France Regis Kubler, Monzer Daoud, Pierre Osmond, Arnaud Polette **Data-driven hybrid FE-AI model of residual stress profiles after shot peening based on a design of experiment methodology**
10:20	B – **Afia Kouadri-Henni** – LS2N, ROMAS, Centrale Nantes – Nantes – France Afia Kouadri-Henni **Simulation of low-cycle fatigue residual stresses in DP600 dual-phase steel laser-welded structures**
10:40	B – **Sevan Garois** – IRT – Metz – France Sevan Garois, Khouloud Derouiche, Monzer Daoud, Khalil Traidi, Francisco Chinesta **Data-driven modeling for residual stress prediction after induction treatment process of C45 steel**
11:00	Coffee break
11:20	B – **Thomas Schenk and Stéphane Berbenni** – Institut Jean Lamour – Nancy / LEM3 – Metz – France Alain Jacques, Thomas Schenk, Komlavi Eloh, Ablam Massa, Stéphane Berbenni **Modelling the evolution of the (200) diffraction peak of a Single Crystal Superalloy during a creep test**
11:40	B – **Nicolas Gort** – University of Applied Sciences and Arts Northwestern Switzerland – Windisch – Switzerland Nicolas Gort **Holistic approach for simulation of residual stresses in high temperature composite structures**
12:00	B – **Komlavi Mawuli Senyo** – Université de Lyon, INSA-Lyon , CNRS UMR5259, LaMCoS – Villeurbanne – France Komlavi Mawuli Senyo, Thibaut Chaise, Éric Feulvarch, Aurélien Chazottes-Leconte, Jean-Michel Bergheau, Daniel Nelias **Electromagnetic Peening Design for Welding or Additive Manufacturing**
12:40	Lunch

face-to-face presentation
Remote presentation

Schedule Monday 28^{th} March
ROOM 103 – Afternoon sessions

13:45	Keynote: D – **Jozef Keckes** – Montanuniversität Leoben – Leoben – Austria Jozef Keckes, Juraj Todt, Michael Meindlhumer, Sabine Bodner, Christina Krywka, Manfred Burghammer **Cross-Sectional X-ray Micro- and Nano-Diffraction on Thin Films, Coatings and Near-Surface Regions**
14:10	D – **Michael Meindlhumer** – Christian Doppler Laboratory for Advanced Synthesis of Novel Multifunctional Coatings at the Department of Materials Science, Montanuniversität Leoben – Leoben – Austria Michael Meindlhumer, Nikolaus Jäger, Stefan Spor, Martin Rosenthal, Hynek Hruby, Julius F. Keckes, Christian Mitterer, Rostislav Daniel, Jozef Keckes, Juraj Todt **Cross-sectional X-ray nanodiffraction reveals nanoscale residual stress and microstructure gradients across the cutting edge area of a TiN coating on WC-Co**
14:30	D – **Alireza Dashti** – Groupe de Physique des Matériaux, UMR CNRS 6634, Normandie Université – Rouen – Framce Alireza Dashti, Clément Keller, Benoît Vieille, Alain Guillet **Dependence of the Residual Stress Profile on the Fiber-Matrix Configuration in Cu-Al Composite Wires**
14:50	D – **Praveen Karebasannanavar Ramachandrappa** – The Open University – Milton Keynes – United Kingdom Praveen K R, Foroogh Hosseinzadeh, P John Bouchard, Fabien Lefebvre, Damien Guillon **Advancing the Contour Method for the Measurement of Residual Stress in Polymer Composites**
15:10	D – **J.P. Nobre** – Univ Coimbra, CFisUC, Department of Physics – Coimbra – Portugal J.P. Nobre, T.C. Smit, R.G. Reid, T. Wu, T. Niendorf, D. Marais, A.M. Venter **Through-thickness residual stress evaluation in a cross-ply fibre-metal laminate using incremental hole drilling**
15:30	D – **Vincent Ji** – ICMMO/SP2M, UMR CNRS 8182, Université Paris-Saclay – Orsay – France Vincent Ji, Nathalie Prud'Homme **Oxide layer stresses studied on a Zr-based metallic glass alloy during oxidation**
15:50	D – **Thibault Chommaux** – Université de Poitiers – Poitiers – France Thibault Chommaux, Pierre-Olivier Renault, Philippe Goudeau, Dominique Thiaudière **In situ electrical and mechanical study of Indium Tin Oxide films deposited on flexible substrate: a synchrotron investigation**
16:10	Coffee break
16:30	F – **Joana Rebelo Kornmeier** – Heinz Maier-Leibnitz Zentrum (MLZ), Technical University of Munich – Garching – Germany Joana Rebelo Kornmeier, Simon Vitzthum, Michael Hofman, Maximilian Gruber, Emad Maawad, Wolfram Volk **Onset of yielding – macro and micro evidence**
16:50	F – **Pengfei Gao** – LASMIS, University of Technology of Troyes (UTT) – Troyes – France Pengfei Gao, Zhidan Sun, Delphine Retraint **Experimental study on multiaxial fatigue properties of a AA7075 alloy treated by surface mechanical attrition treatment**
17:10	F – **Olivier Castelnau** – PIMM – Paris – France Vincent Jacquemain, Doriana Viinci, Christophe Cheuleu, Vincent Michel, Véronique Favier, Olivier Castelnau, Cristain Mocuta, Dominique Thiaudière, Nicolas Ranc **In situ investigation of the gigacycle fatigue domain using ms – ns time resolved x-ray diffraction at synchrotron facility**
17:30	F – **Johan Ahlström** – Chalmers Univ Tech – Gothenburg – Sweden Can Yildirim, Yubin Zhang, Erika Steyn, Fang Liu, Carsten Detlefs, Johan Ahlström **Exploring Three Dimensional Orientation and Residual Stresses in Railway Steels**
17:50	F – **Fabian Jaeger** – Center for Structural Materials MPA-IfW, Technische Universität Darmstadt – Darmstadt – Germany Fabian Jaeger, Alessandro Francesschi, Holger Hoche, Peter Groche, Matthias Oechsner **Improvement of the fatigue properties of cold extruded austenitic stainless steel by optimization of the residual stress state and its stability**

face-to-face presentation
Remote presentation

Schedule Tuesday 29th March
Auditorium – Morning sessions

08h30	Plenary talk : **Yann Le Bouar** – Université Paris-Saclay, ONERA, CNRS, LEM - France Yann Le Bouar **Internal stresses and microstructure evolutions: modelling by the phase field method**
09h25	Keynote: C – **David Canelo-Yubero** – Helmholtz-Zentrum Hereon – Geesthacht – Germany David Canelo-Yubero, Guilherme Abreu Faria, Manuel Sanchez-Poncela, Peter Staron, Juan Manuel Martinez, Emad Maawad, Norbert Schell **On the influence of thermal treatment on residual stresses in an additively manufactured austenitic steel 316L**
09h50	C – **Ardeshir Sarmast** – Fraunhofer Institute for Mechanics of Materials (IWM) – Freiburg – Germany Jan Schubnell, Ardeshir Sarmast, Felix Altenhöner, Shahram Sheikhi, Moritz Braun, Sören Ehlers **Residual stress analysis of butt welds made of additive and traditionally manufactured 316L stainless steel plates**
10h10	C – **Sandra Cabeza** – Insitute Laue Langevin – Grenoble – France Sandra Cabeza, Burak Ozcan, Jonathan Cormier, Thilo Pirling, Ines Puente, Thomas Hansen, Inmaculada Lopez, Elena Lopez **Neutron in-situ monitoring of additively manufactured Ni-superalloys: a comprehensive overview from fabrication to post heat treatment and mechanical performance.**
10h30	C – **Claire Gong** – Light, Nanomaterials, Nanotechnologies, CNRS ERL 7004, University of Technology of Troyes – Troyes – France Claire Gong, Joseph Marae Djouda, Abdelhamid Hmima, Fabrice Gaslain, Mahdi Chemkhi, Thomas Maurer, Benoît Panicaud **Influence of mechanical attrition treatment on 17-4 PH stainless steel: Comparison at submicron scale between SENT specimens**
10h50	Coffee break
11h10	C – **Mohamed Fares Slim** – ESRF – The European Synchrotron – Grenoble – France Mohamed Fares Slim, Guillaume Geandier, Fabien Rouillard, Benoît Malard **Residual stress gradient in austenitic stainless-steel cladding after exposure in carburizing nuclear liquid sodium**
11h30	C – **Yanxue Zhang** – Arts et Métiers – Aix en Provence – France Yanxue Zhang **On residual stress development during gaseous nitriding of M2 steel**
11h50	C – **Sébastien Jégou** – MSMP Lab., Arts et Métiers – Aix-en-Provence – France Sébastien Jégou, Laurent Barrallier **Residual stresses after nitriding on as quenched bearing steel**
12h10	C – **Michael Zürn** – Institute of Applied Materials - Materials Science (IAM-WK), Karlsruhe Institute of Technology (KIT) – Karlsruhe – Germany Michael Zürn, Ogün Baris Tapar, Jérémy Epp, Fabian Wilde, Jens Gibmeier **Real-time monitoring of the near-surface stress development during quenching after low-pressure carburizing**
12h30	Lunch

face-to-face presentation
Remote presentation

Schedule Tuesday 29th March
Auditorium – Afternoon sessions

13h45	Poster session
15h15	Keynote: B – **Claire Maurice** – Mines Saint-Etienne, CNRS – Saint-Etienne – France Claire Maurice, Florent Coudon, Stéphane Gourdin, Daniel Gaky **Residual stress field beneath spherical indentation in Ni-based superalloy: HR-EBSD vs CPFEM**
15h40	B – **Björn Andersson** – Chalmers University of Technology – Gothenburg – Sweden Björn Andersson, Johan Ahlström, Lennart B Josefson, Magnus Ekh **Simulation of welding in pearlitic steels - Phase trans-formations, homogenization and cyclic plasticity**
16h00	B – **Vincent Robin** – EDF – Chatou – France Vincent Robin, Sofiane Hendili, Charles Demay, David Iampietro, Josselin Delmas, David Albrecht **Digital abacus for welding of thick section steel tubes**
16h20	Coffee break
16h40	A – **Abir Boujnah** – Laboratoire de Mécanique des Sols, Structures et Matériaux – GIF-SUR-YVETTE – France Abir Boujnah, Jan Neggers, Denis Solas, Aurélie Jamoneau, Véronique Aubin **Dissolving as a means to determine residual stress in wires**
17h00	A – **Alexander Liehr** – Institute of Materials Engineering, Univerity of Kassel – Kassel – Germany Alexander Liehr, Sebastian Degener, Artjom Bolender, Thomas Wegener, Felix Wittich, Thomas Niendorf, Andreas Kroll **Non-destructive residual stress analysis using micromagnetic and energy dispersive diffraction methods – Opportunities and Challenges**
17h20	A – **Rahel Jedamski** – Leibniz Institute for Materials Engineering - IWT – Bremen – Germany Rahel Jedamski, Jonas Heinzel, Bernhard Karpuschewski, Jérémy Epp **In-process measurement of Barkhausen noise for detection of thermo-mechanical influenced surface areas during grinding**
17h40	D – **Laurent Barrallier** – Arts et Métiers, Institute of Technology – Aix-en-Provence – France Jabrane Kanboui, Nathalie Mangelinck-Noël, Laurent Barrallier **XRD residual stress measurement in grains of casting photovoltaic silicon**
19h00	Reception at Town Hall
20h00	Gala Dinner at Town Hall

face-to-face presentation
Remote presentation

Schedule Tuesday 29th March
Room 103 – Morning sessions

09h25	Keynote: D – **Pierre-Olivier Renault** – University of Poitiers – Poitiers – France Pierre-Olivier Renault, Patrice Kreiml, Barbara Putz, Shuhel Altaf Husain, Damien Faurie, Megan Jo Cordill **Mechanical influence of layer order in bilayer thin films during biaxial straining: synchrotron diffraction investigation**
09h50	D – **Radomir Kužel** – Faculty of Mathematics and Physics, Charles University – Prague – Czech Republic Radomir Kužel, Lukáš Horák, Milan Dopita **X-Ray Diffraction Study of Stresses and Textures in Strongly Oriented Thin Films**
10h10	D – **Manuela Klaus** – Helmholtz-Zentrum Berlin – Berlin – Germany Manuela Klaus, Christoph Genzel, Elmeri Österlund, Mervi Paulasto-Kröckel **Residual stress analysis of epitaxial MOVPE AlN films deposited on silicon wafers**
10h30	D – **Przemyslaw Kot** – AGH - University of Science and Technology, WFiIS – Krakow – Poland Przemyslaw Kot, Andrzej Baczmanski, Marcin Wronski, Vadim Sikolenko, Gizo Bokuchava, Christian Scheffzuk, Sebastian Wronski **Diffraction measurement of stress evolution for selected groups of grains in textured polycrystalline materials**
10h50	Coffee break
11h10	A – **Jaroslav Vaclavik** – Vyzkumny a zkusebni ustav Plzen s.r.o. – Plzen – Czech Republic Jaroslav Vaclavik, Radka Musilova, Bohuslav Reha **Groove grinding method for near the surface residual stress measurement**
11h30	A – **Xavier van Heule** – University of Bristol – Bristol – United Kingdom Xavier van Heule, Chris Truman, Harry Coules, Ronald Clark **Adaptation of the ICHD method for spent AGR fuel cladding**
11h50	A – **Zhe Cai** – Department of Mechanical, Aerospace and Civil Engineering, University of Manchester – Manchester – United Kingdom Zhe Cai, Jan Roman Hönnige, Matthew Roy **A correction method for measuring residual stress of irregular cross-section weldments with the contour method**
12h10	Lunch

face-to-face presentation
Remote presentation

Schedule Tuesday 29th March
Room 103 – Afternoon sessions

13h45	Poster session
15h15	Keynote: F – **Harry Coules** – University of Bristol – Bristol – United Kingdom Harry Coules, Matthew Weltevreden, Isabel Hadley **Residual stresses in probabilistic structural integrity assessment**
15:40	C – **P John Bouchard** – The Open University – Milton Keynes – United Kingdom P John Bouchard, Ruiyao Zhang **Measured Residual Stresses in a Ring-weld After PWHT**
16h00	F – **Arne Kromm** – Bundesanstalt für Materialforschung und -prüfung (BAM) – Berlin – Germany Michael Rhode, Arne Kromm, Tobias Mente, Denis Czeskleba, Eugen Wilhelm, Thomas Kannengiesser **Residual stresses and hydrogen assisted cracking in thick-walled submerged arc weld joints for offshore applications**
16h20	Coffee break
16h40	B – **Joel Rech** – Centrale Lyon - ENISE – Saint-Etienne – France Maxime Dumas, Dorian Fabre, Frédéric Valiorgue, Guillaume Kermouche, Bertrand Truffart, Mathieu Girinon, Alexandre Brosse, Habib Karaouni, Joel Rech **3D numerical modelling of turning-induced residual stresses for a fillet radius in 15-5PH stainless steel**
17h00	B – **Daniel Weber** – Institute for Manufacturing Technology and Production Systems, Technische Universität Kaiserslautern – Kaiserslautern – Germany Daniel Weber, Benjamin Kirsch, Julianne E. Jonsson, Chris R. D'Elia, Barbara S. Linke, Michael R. Hill, Jan C. Aurich **Simulation based investigation on the effect of the topology and size of milled thin-walled monolithic aluminum parts on the part distortion due to residual stresses**
17h20	C – **Lorenz Engelking** – Bundesanstalt für Materialforschung und -prüfung (BAM) – Berlin – Germany Lorenz Engelking, Antonia Eissel, Dirk Schröpfer, Kai Treutler, Thomas Kannengießer, Volker Wesling **Optimisation of surface residual stresses using hybrid milling processes for additive manufactured Ni alloy components**
17h40	C – **Karsten Wandtke** – Bundesanstalt für Materialforschung und -prüfung – Berlin – Germany Amadeus Becker, Karsten Wandtke, Dirk Schröpfer, Arne Kromm, Thomas Kannengießer, Ronny Scharf-Wildenhain, André Hälsig **Residual stress evolution during slot milling for repair welding and WAAM of high-strength steel components**
19h00	Reception at Town Hall
20h00	Gala Dinner at Town Hall

face-to-face presentation
Remote presentation

Schedule Wednesday 30^{th} March
Auditorium – Morning sessions

08h30	Plenary talk : **Giovanni Bruno** - University of Potsdam, Institute of Physics and Astronomy and BAM (Bundesanstalt für Materialforschung und -prüfung) Berlin **Redefining residual stress analysis to tackle the challenges posed by additively manufactured materials and structures**
09h25	Keynote: A – **Can Yildirim** – European Synchrotron Radiation Facility – Grenoble – France Can Yildirim, Philip Cook, Hugh Simons, Henning Poulsen, Raquel Rodrigez-Lamas, Mustafacan Kutsal, Julia Garriga-Ferrer, Carsten Detlefs **3D mapping of strain and orientation of embedded crystalline structures using dark field X-ray microscopy**
09h50	C – **Dhia Charni** – Leibniz Institute for Materials Engineering - IWT – Bremen – Germany Dhia Charni, Heiner Meyer, Svetlana Ishkina-Ortmann, Lasse Langstädtler, Christian Schenck, Norbert Schell, Bernd Kuhfuss, Jérémy Epp **Numerical analysis and experimental investigation of strain fields during rotary swaging of steel by in-situ synchrotron X-ray radiation**
10h10	C – **Florian Lang** – Institute for Applied Materials (IAM-WK), Karlsruhe Institute of Technology (KIT) – Karlsruhe – Germany Florian Lang, Johannes-Christian Schmitt, Sandra Cabeza, Thilo Pirling, Jochen Fiebig, Robert Vaßen, Jens Gibmeier **Residual stresses of large cavities filled by cold gas repair spray**
10h30	C – **Mate Sepsi** – 1University of Miskolc, Institute of Physical Metallurgy, Metal forming and Nanotechnology – Miskolc – Hungary Mate sepsi **Residual stress monitoring as a quality assurance process supporting manufacturing and development**
10h50	Coffee break
11h10	C – **Steffen Heikebrügge** – Institute of Production Engineering and Machine Tools, Leibniz University Hannover – Garbsen – Germany Steffen Heikebrügge, Bernd Breidenstein, Christian Dänekas, Peter Schaumann **Residual stresses of thick sheet butt welds influenced by deep rolling**
11h30	C – **Simone Carone** – Politecnico di Bari – Bari – Italy Simone Carone, Vincenzo Moramarco, Giovanni Pappalettera, Giuseppe Barbieri, Caterina Casavola **Application of the Contour Method for residual stress measurement in Ti - Inconel welded joints**
11h50	C – **Tim Richter** – Bundesanstalt für Materialforschung und -prüfung – Berlin – Germany Tim Richter **Residual stress distribution on TIG and FSW welded component like samples of CoCrFeMnNi high- and CoCrNi medium entropy alloy**
12h10	C – **Eckehard Mueller** – Bochum Universtiy of Applied Sciences – Bochum – Germany Eckehard Mueller, Thomas Hermann **Formation of residual stresses at welding seams with S235 and S355**
12h30	Lunch

face-to-face presentation

Remote presentation

Schedule Wednesday 30^{th} March
Auditorium – Afternoon sessions

13:45	Keynote: A – **Guilherme Abreu Faria** – Helmholtz-Zentrum Hereon – Hamburg – Germany Guilherme Abreu Faria, Gleb Dovzhenko, Thomas Wroblewski, Peter Staron, Martin Müller **New Opportunities for Synchrotron Residual Stress Analysis: The New White Beam Beamline P61A at PETRA III**
14:10	A – **Christoph Genzel** – Helmholtz-Zentrum Berlin für Materialien und Energie – Berlin – Germany Christoph Genzel, Manuela Klaus, Daniel Apel **Residual stress analysis at the inner wall of small boreholes by energy-dispersive diffraction: Synchrotron versus laboratory**
14:30	A – **Sebastian Degener** – Institute of Materials Engineering, University of Kassel – Kassel – Germany Sebastian Degener, Alexander Liehr, Artjom Bolender, Guilherme Abreu Faria, Gleb Dovzhenko, Peter Staron, Martin Müller, Thomas Niendorf **Assessing residual stress states using high energy white beam synchrotron radiation – prospects at P61A at DESY**
14:50	A – **Daniel Apel** – Helmholtz-Zentrum Berlin für Materialien und Energie – Berlin – Germany Daniel Apel, Mirko Boin, Manuela Klaus, Roland Mainz, Guido Wagener, Christoph Genzel **The potential of high-flux liquid anode X-ray sources for micro-structure and stress analysis**
15:10	A – **Valeria Mertinger** – University of Miskolc, Institute of Physical Metallurgy, Metal forming and Nanotechnology – Miskolc – Hungary Valeria Mertinger, Mate Sepsi, Marton Benke **How to take advantage of the metallurgical problems associated with residual stress measurement?**
15:30	Closing ceremony

face-to-face presentation
Remote presentation

Schedule Wednesday 30^{th} March
Room 103 – Morning sessions

09h25	Keynote: F – **Johannes Preußner** – Fraunhofer IWM – Freiburg – Germany Jan Schubnell, Johannes Preußner, Majid Farajian **Decreasing and increasing the value of the compressive residual stresses induced by high frequency mechanical impact treatment during cyclic loading**
09h50	A – **Neunchezhian Srinivasan** – Indian Institute of Technology-Madras – Chennai – India Lalith Kumar Bhaskar, Gobind Kumar, Nedunchezhian Srinivasan, Ravi Kumar **Design and development of a miniaturized multiaxial test setup for in situ x-ray diffraction experiments**
10h10	F – **Ewann Gautier** – ENSTA Bretagne, UMR CNRS 6027, IRDL – Brest – France Ewann Gautier, Bruno Leveil, Cédric Doudard, Sylvain Calloch, Anthony Ezanno **Calibration and validation of XEC for in-situ stress assessment under cyclic loading**
10h30	F – **Simon Strodick** – Chair of Materials Test Engineering (WPT), TU Dortmund University – Dortmund – Germany Simon Strodick, Felix Roman Hühn, Robert Schmidt, Dirk Biermann, Andreas Zabel, Frank Walther **Evolution of the residual stress state in BTA deep-drilled components under quasi-static and cyclic loading**
10h50	Coffee break
11h10	F – **Mohammed Belassel** – Proto Manufacturing – Lasalle, On – Canada Mohammed Belassel, James Pineault, Michael Brauss **Introducing Triaxial Stress Field for Residual Stress Measurement Using Cos-Alpha Technique**
11h30	F – **Arne Kromm** – Bundesanstalt für Materialforschung und -prüfung (BAM) – Berlin – Germany Arne Kromm, Dirk Schröpfer, Michael Rhode, Robert Wimpory, Sergej Gook, Thomas Kannengießer **Influence of residual stresses on stress relief cracking of thick-walled creep-resistant steel welds**
11h50	F – **Antoine Deheeger** – TechnipFMC – Le Trait – France Antoine Deheeger, Romain Ferré, Didier Hanonge **Residual Stresses in Flexible Pipe Tensile Armour Wires**
12h10	F – **Andreas Jobst** – Friedrich-Alexander-Universität Erlangen-Nürnberg, Lehrstuhl für Fertigungstechnologie – Erlangen – Germany Andreas Jobst, Marion Merklein **Stability of Forming Induced Residual Stresses in Stainless Steel Parts at Elevated Temperature**
12h30	Lunch

face-to-face presentation
Remote presentation

Schedule Wednesday 30^{th} March
Room 103 – Afternoon sessions

13:45	Keynote: E – **Nicola Simon** – Institute for Applied Materials (IAM-WK), Karlsruhe Institute of Technology (KIT) – Karlsruhe – Germany Nicola Simon, Ulrich Lienert, Malte Blankenburg, Jens Gibmeier **Evolution of lattice strain pole figures for uniaxial deformation of textured duplex stainless steel**
14:10	E – **Lisa Germain** – MSMP Laboratory – Aix-en-Provence – France Lisa Germain, Sébastien Jégou, Laurent Barrallier **Effects of stress and strain gradients on the kinetics of thermochemical surface treatments (gas nitriding) of steels**
14:30	E – **Julien Teixeira** – Institut Jean Lamour, Univ. Lorraine CNRS – Nancy – France Karthikeyan Jeyabalan, Julien Teixeira, Sabine Denis, Guillaume Geandier, Jacky Dulcy, Benoît Denand, Grégory Michel, Simon Catteau, Marc Courteaux **Effect of carbon and nitrogen enrichment in the austenitic field on the formation of microstructures and residual stresses in carburized and carbonitrided low-alloyed steel parts: experimental study and simulation**
14:50	E – **Mathias Lamari** – Institut Jean Lamour – Nancy – France Mathias Lamari, Sébastien Allain, Guillaume Geandier, Astrid Perlade, Kangying Zhu **In situ determination of phase stress states in unstable medium manganese steels by high energy X-ray diffraction on synchrotron beamline**
15:10	C – **Michael Georg Zuern** – Technische Universität Braunschweig, Institute of Joining and Welding (ifs) – Braunschweig – Germany Michael Georg Zuern, Morteza Dadkhah, Thomas Nitschke-Pagel, Jens Gibmeier **Residual stress generation in cold-formed welded steels - Part I: Impact of pre-deformation on residual stresses**

face-to-face presentation
Remote presentation

Plenary lectures

Ismail Cez Noyan. *Opportunities and Challenges in Diffraction Stress Analysis*

Yann Le Bouar, A. Finel, A. Ruffini, M. Degeiter, Maeva Cottura, and Benoît Appolaire. *Internal stresses and microstructure evolutions: modelling by the phase field method*

Giovanni Bruno. *Redefining residual stress analysis to tackle the challenges posed by additively manufactured materials and structures*

Session A: Measurement methods

Session A: Orals

Yashar Javadi, Alistair Hutchison, Jonathan Singh, Ehsan Mohseni, Salaheddin Rahimi, Jorn Mehnen, Charles MacLeod, Gareth Pierce, Katherine Tant, and Anthony Gachagan. *Feasibility Study of Residual Stress Measurement Using Phased Array Ultrasonic Method*

Can Yildirim, Philip Cook, Hugh Simons, Henning Poulsen, Raquel Rodrigez-Lamas, Mustafacan Kutsal, Julia Garriga-Ferrer, and Carsten Detlefs. *3D mapping of strain and orientation of embedded crystalline structures using dark field X-ray microscopy*

Guilherme Abreu Faria, Gleb Dovzhenko, Thomas Wroblewski, Peter Staron, and Martin Müller. *New Opportunities for Synchrotron Residual Stress Analysis: The New White Beam Beamline P61A at PETRA III*

Elizabeth Sackett and Jeremy Robinson. *Experimental validation of nanoindentation as a technique for rapid residual stress measurements on heat treatable aluminium alloys*

abir boujnah abir, jan neggers jan, Denis Solas, Aurélie Jamoneau, and Véronique Aubin. *Dissolving as a means to determine residual stress in wires*

Alexander Liehr, Sebastian Degener, Artjom Bolender, Thomas Wegener, Felix Wittich, Thomas Niendorf, and Andreas Kroll. *Non-destructive residual stress analysis using micromagnetic and energy dispersive diffraction methods – Opportunities and Challenges*

Rahel Jedamski, Jonas Heinzel, Bernhard Karpuschewski, and Jérémy Epp. *In-process measurement of Barkhausen noise for detection of thermo-mechanical influenced surface areas during grinding*

Jaroslav Vaclavik, Radka Musilova, and Bohuslav Reha. *Groove grinding method for near the surface residual stress measurement*

Xavier van Heule, Chris Truman, Harry Coules, and Ronald Clark. *Adaptation of the ICHD method for spent AGR fuel cladding*

Zhe Cai, Jan Roman Hönnige, and Matthew Roy. *A correction method for measuring residual stress of irregular cross-section weldments with the contour method*

Xingxing Zhang, Joana Rebelo Kornmeier, Michael Hofmann, Shadi Alameddin, Felix Fritzen, Anika Langebeck, and Annika Bohlen. *Residual stresses in laser-processed metal matrix composite coatings*

Abdellahi Abderahmane, Alain Lhémery, and Laurent Daniel. *An elastic guided wave tomographic method for multiaxial stress imaging*

Yuri Kudryavtsev and Jacob Kleiman. *Ultrasonic Measurement of Residual Stresses in Welded Elements and Structures*

Samantha Veck, Foroogh Hosseinzadeh, and P John Bouchard. *Feasibility Study of Near Surface Residual Stress Field Reconstruction using Eigenstrain and Stress Function Methods*

Daniel Apel, Mirko Boin, Manuela Klaus, Roland Mainz, Guido Wagener, and Christoph Genzel. *The potential of high-flux liquid anode X-ray sources for micro-structure and stress analysis*

Valeria Mertinger, Mate Sepsi, and Marton Benke. *How to take advantage of the metallurgical problems associated with residual stress measurement?*

Lalith Kumar Bhaskar, Gobind Kumar, Nedunchezhian Srinivasan, and Ravi Kumar. *Design and development of a miniaturized multiaxial test setup for in situ x-ray diffraction experiments*

Andrzej Baczmanski, Marianna Marciszko-Wiackowska, Adrian Oponowicz, Manuela Klaus, Christoph Genzel, Miroslaw Wrobel, and Chedly Braham. *Evolution of stresses and elastic properties below sample surface studied using X-ray diffraction*

Chedly Braham, Léo Morin, Pouya Tajdary, and Gonzalo Gonzalez. *A deconvolution method for the mapping of residual-stresses by X-ray diffraction*

Christoph Genzel, Manuela Klaus, and Daniel Apel. *Residual stress analysis at the inner wall of small boreholes by energy-dispersive diffraction: Synchrotron versus laboratory*

Sebastian Degener, Alexander Liehr, Artjom Bolender, Guilherme Abreu Faria, Gleb Dovzhenko, Peter Staron, Martin Müller, and Thomas Niendorf. *Assessing residual stress states using high energy white beam synchrotron radiation – prospects at P61A at DESY*

Mohammed Belassel, James Pineault, and Michael Brauss. *Introducing Triaxial Stress Field for Residual Stress Measurement Using Cos-Alpha Technique*

Session A: Posters

Bruno Lima, Ronnie Rego, André Oliveira, and Thiago Oliveira. *Early Stages Fatigue Detection Using Magnetic Barkhausen Noise for Evaluation of Residual Stress Relaxation*

Wen Cui, Manuel Sánchez Poncela, Romain Badyka, Philipp Mayr, Ricardo Fernández Gutiérrez, Philip J. Withers, and Matthew J. Roy. *EASI-STRESS Standardization of Industrial Residual Stress Measurement: Benchmark Specimen Design*

Aboubakar Sedick Ibrahim Mamane, Sylvain Giljean, Marie-José Pac, and Gildas L'Hostis. *Numerical and Experimental Study of the Residual Stress Profile in Fiber Reinforced Composites: Optimization of the Incremental Hole Drilling Method*

Sebastian Send, Dominik Dapprich, and Mikko Palosaari. *Fast residual stress determination by means of two-dimensional X-ray diffraction using the sin2ψ-method*

Jonas Holmberg. *Influence of different electrolytes and electrolytical polishing methods for residual stress profile measurements with lab-XRD*

Leila Sellami, Virgil Optasanu, Rémi Martin, Laurent Kubat, Manuel François, and Éric Bourillot. *Micromechanical analysis of materials by Scanning Microwave Microscopy (SMM)*

Robert C. Wimpory, Michael Hofmann, Joana Rebelo Kornmeier, and Jan Šaroun. *Factors influencing the sampled gauge volume (SGV) when measuring in the out of plane (normal) direction.*

Kenji Suzuki, Ayumi Shiro, Takahisa Shobu, Hidenori Toyokawa, and Choji Saji. *Stress Measurement of Shrink-Fit Ring using Double-Exposure Method with Hard Synchrotron X-Rays*

Tobias Fritsch, Maximilian Sprengel, Alexander Evans, Lena Farahbod-Sternahl, Romeo Saliwan-Neumann, Michael Hofmann, and Giovanni Bruno. *Determination of residual stresses in additively manufactured lattice structures*

Peter Szobota, Mate Sepsi, and Valeria Mertinger. *Innovative Application of Centerless Diffractometers for Non-Destructive Qualification of Surface Treatment Processes*

Shyjumon Ibrahimkutty. *Rigaku solution for micro area X-ray Stress analysis – SmartLab and AutoMATE II*

Marco Beghini, Tommaso Grossi, Ciro Santus, and Emilio Valentini. *A calibration bench to validate systematic error compensation strategies in hole drilling measurements*

Antoine Proust, Thibaux Blanc, Marouane Brahimi, Yves Royal, and David Quidort. *Mapping residual stress in quenched and tempered high strength steels plates*

Yoshihisa Sakaida, Kenji Suzuki, and Keisuke Tanaka. *Standard of the cosα method for X-ray stress measurement using two-dimensional detector*

Carola Corazza, Alessio Benincasa, and Enrico Boccini. *Experimental Investigations on the Hole Drilling Method for the Residual Stress Measurement on Different Materials According to the new ASTM E837-20*

Jeffrey Bunn, Christopher Fancher, Ray Gregory, Paris Cornwell, and Andrew Payzant. *Recent Upgrades to the Residual Stress Diffractometer at the High Flux Isotope Reactor (HIDRA)*

Arnold C. Vermeulen. *Challenges for Retained Austenite analysis with XRD*

Fabien Lefebvre, Simon Robbe, Eric Usmial, and Thierry Bergey. *GFAC (French Association for residual stress analysis)*

Henri Walaszek, Fabien Lefebvre, Fan Zhang, Eric Wasniewski, and Patrick Bouteille. *Contribution of Non-Destructive Methods for residual and applied stress assesment*

Jörg Behler. *Fast X-ray Residual Stress Determination using the cos-alpha Method and Measurement Automation*

Julien Vaïssette, Manuel Paredes, Catherine Mabru, and Hervé Orcière. *Proposing a method for characterizing residual stresses in small diameter drawn wires*

Maximilian Krause and Thomas Böhlke. *Full-Field X-Ray Elastic Constant Calculation*

Richard Moat, Joe Kelleher, and John Brokx. *Modelling the effect of defects in a neutron gauge volume*

Philippe Bocher, Romane Le Pellec, Dorian Delbergue, and Pierre Maurel. *Normal shear stress contribution on surface residual stress estimation using X-ray diffraction methods: a sensitive question*

Vincent Delage, Laurence Besnault, David Maréchal, Renaud Frappier, and Julian Card. *Residual stresses measurement with the contour method on a cold expanser hole, comparison to finite*

Session B: Modelling methods

Session B: Orals

Claire Maurice, Florent Coudon, Stéphane Gourdin, and Daniel Galy. *Residual stress field beneath spherical indentation in Ni-based superalloy: HR-EBSD vs CPFEM*

Regis Kubler, Monzer Daoud, Pierre Osmond, and Arnaud Polette. *Data-driven hybrid FE-AI model of residual stress profiles after shot peening based on a design of experiment methodology*

Nicolas Gort. *Holistic approach for simulation of residual stresses in high temperature composite structures*

Komlavi Mawuli Senyo, Thibaut Chaise, Éric Feulvarch, Aurélien Chazottes-Leconte, Jean-Michel Bergheau, and Daniel Nelias. *Electromagnetic Peening Design for Welding or Additive Manufacturing*

Afia Kouadri-Henni. *Simulation of low-cycle fatigue residual stresses in DP600 dual-phase steel laser-welded structures*

Sevan Garois, Khouloud Derouiche, Monzer Daoud, Khalil Traidi, and Francisco Chinesta. *Data-driven modeling for residual stress prediction after induction treatment process of C45 steel*

Björn Andersson, Johan Ahlström, Lennart B Josefson, and Magnus Ekh. *Simulation of welding in pearlitic steels - Phase trans-formations, homogenization and cyclic plasticity*

Vincent Robin, Sofiane Hendili, Charles Demay, David Iampietro, Josselin Delmas, and David Albrecht. *Digital abacus for welding of thick section steel tubes*

Alain Jacques, Thomas Schenk, Komlavi Eloh, Ablam Massa, and Stéphane Berbenni. *Modelling the evolution of the (200) diffraction peak of a Single Crystal Superalloy during a creep test*

Maxime Dumas, Dorian Fabre, Frédéric Valiorgue, Guillaume Kermouche, Bertrand Truffrat, Mathieu Girinon, Alexandre Brosse, Habib Karaouni, and Joel Rech. *3D numerical modelling of turning-induced residual stresses for a fillet radius in 15-5PH stainless steel*

Daniel Weber, Benjamin Kirsch, Julianne E. Jonsson, Chris R. D'Elia, Barbara S. Linke, Michael R. Hill, and Jan C. Aurich. *Simulation based investigation on the effect of the topology and size of milled thin-walled monolithic aluminum parts on the part distortion due to residual stresses*

Session B: Posters

Jose Jimenez and Lakhdar Taleb. *About the Memory of Transformation Induced Plasticity in 35NCD16 Carbon Steel Subjected to Various Thermomechanical Histories*

André Luiz Oliveira, Guilherme Guimarães, Ronnie Rego, and Alfredo Faria. *Design for Residual Stress: Understanding the finishing processes interaction predictively.*

Valentine Legrand, Serge Prigent, Pierre-Louis Reydet, Florent Krajcarz, and Nadège Streich. *Understanding of Satoh trials to assess the residual stresses occurring during welding of Invar®*

Jakob Bialowas, Thomas Antretter, and Jürgen Maierhofer. *Process model of the rim hardening of railway wheels*

Thomas Nitschke-Pagel and Jiamin Sun. *Influence of strain hardening models on the predicted welding residual stresses*

Mohamed Sokore, Rija-Nirina Raoelison, Sihao Deng, and Hanlin Liao. *Numerical investigation of the thermomechanical stresses due to the high-speed collision in cold spray additive manufacturing.*

Alexander Bodewig, Florian Pape, and Gerhard Poll. *Application of stainless steel bearings with pre-induced residual stresses*

Laura Millán García, Gabriel Carro Sevillano, Gabriel Kronberger, Óscar Garnica Alcázar, Ignacio Collado Ropero, Gizo Bokuchava, Ricardo Fernández Serrano, Jose Ignacio Hidalgo Pérez, Patricie Halodova, Alberto Sáez Maderuelo, and Gaspar González Doncel. *Genetic Programming and FEM simulation for a microscopic residual stress description in polycrystals using neutron diffraction and EBSD data.*

Session C: Residual stresses in manufacturing processes

Session C: Orals

Thomas Niendorf, Behzad Aminforoughi, Sebastian Degener, and Alexander Liehr. *Determination of residual stresses in materials processed by additive manufacturing – challenges and consequences*

David Canelo-Yubero, Guilherme Abreu Faria, Manuel Sanchez-Poncela, Peter Staron, Juan Manuel Martinez, Emad Maawad, and Norbert Schell. *On the influence of thermal treatment on residual stresses in an additively manufactured austenitic steel 316L*

Maximilian Sprengel, Gunther Mohr, Simon J. Altenburg, Alexander Evans, Itziar Serrano-Munoz, Arne Kromm, Thilo Pirling, Giovanni Bruno, and Thomas Kannengiesser. *Surface and bulk Residual Stress in Laser Powder Bed Fused 316L: Influence of Inter Layer Time and Scanning Velocity*

Alexander Evans, Itziar Serrano-Munoz, Maximilian Sprengel, Tatiana Mishurova, Tobias Fritsch, Alexander Ulbricht, Jakob Schröder, Arne Kromm, Thomas Kannengiesser, and Giovanni Bruno. *Diffraction based residual stress analysis for metal additive manufacturing*

Felix Schmeiser, Erwin Krohmer, Eckart Uhlmann, and Walter Reimers. *In situ stress analysis during laser powder bed fusion using synchrotron radiation diffraction*

Prabhat Pant, Vladimir Luzin, Sebastian Proper, Seyed Hosseini, Johan Moverare, Kjell Simonsson, and Ru Lin Peng. *Effect of re-melting strategies on the residual stresses in additively manufactured L-shaped IN718 parts*

Halsey Ostergaard and Anna Paradowska. *In-situ and ex-situ neutron tools for probing residual stress and microstructure interactions during additive manufacturing and subsequent heat treatment*

Jan Schubnell, Ardeshir Sarmast, Felix Altenhöner, Shahram Sheikhi, Moritz Braun, and Sören Ehlers. *Residual stress analysis of butt welds made of additive and traditionally manufactured 316L stainless steel plates*

Sandra Cabeza, Burak Ozcan, Jonathan Cormier, Thilo Pirling, Ines Puente, Thomas Hansen, Inmaculada Lopez, and Elena Lopez. *Neutron in-situ monitoring of additively manufactured Ni-superalloys: a comprehensive overview from fabrication to post heat treatment and mechanical performance.*

Claire Gong, Joseph Marae Djouda, Abdelhamid Hmima, Fabrice Gaslain, Mahdi Chemkhi, Thomas Maurer, and Benoît Panicaud. *Influence of mechanical attrition treatment on 17-4 PH stainless steel: Comparison at sub-micron scale between SENT specimens*

Florian Lang, Johannes-Christian Schmitt, Sandra Cabeza, Thilo Pirling, Jochen Fiebig, Robert Vaßen, and Jens Gibmeier. *Residual stresses of large cavities filled by cold gas repair spray*

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