



EF European Federation for
Non-Destructive Testing
NDT



**CENTRO ITALIANO
DI COORDINAMENTO
PER LE PROVE
NON DISTRUTTIVE**

Verona, 15-19 June 2026

m **ITALY** **ECNDT** **14th**
2026

EUROPEAN CONFERENCE ON NON-DESTRUCTIVE TESTING



FINAL PROGRAMME

VERONA, 15-19 JUNE



EUROPEAN CONFERENCE ON NON-DESTRUCTIVE TESTING

MONDAY 15 JUNE

17:00 - OPENING CEREMONY

Palexpo, Auditorium Verdi
(Entrance from Viale del Lavoro, Veronafiere)

19:00-21:00
Welcome Cocktail

TUESDAY 16 JUNE

10:00-11:30
Coffee Break

12:30-14:00
Lunch

15:30-16:30
Coffee Break

17:00-18:00
Networking Happy Hour

AM.4 Materials Characterization

ROOM 11.A1

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|---------------------|---|
| 9:00-9:20 | ID170 , <i>On the Use of OCLC Emats to Detect Notches and Cracks in Metal Plates</i> , Matthew Morrissey, Paddy Caskey, Pouyan Khalili, Frederic Cegla |
| 9:20-9:40 | ID215 , <i>Challenges in Ultrasonic NDT/NDE of Small-Scale Structural Defects in Metal Pipelines of the Energy Sector</i> , Renaldas Raišutis, Vykintas Samaitis, Audrius Stravinskas, Egidijus Žukauskas, Vaidotas Cicėnas |
| 9:40-10:00 | ID106 , <i>Optimizing the Use of Developer “a”, “b”, “c” and “d” in Fluorescent Penetrant Testing: Performance, Limits and Critical Issues in the Aeronautical Sector</i> , Massimo Capriolo, Joseph De Francesco, Gaetano Buonocore, Andrea Macchi, Davide Spinozzi, A. Girolami, Fulvio Radaelli |
| 10:00-10:20 | ID446 , <i>In-Situ Electromagnetic Monitoring of Annealing Behaviour in Interstitial-Free Steel using a High-Temperature Furnace Rig</i> , Lei (Frank) Zhou, Mohsen A. Jolfaei, John Wilson, Carl Slater, Claire Davis, Anthony Peyton |
| 10:20-10:40 | ID236 , <i>Suitability of Different Non-Destructive Techniques for Physical and Mechanical Characterization of the Wood used in Construction</i> , Narintsoa Ranaivomanana, Jean-Paul Balayssac, Bhanu Kumar Srirangarajupalli |
| 10:40-11:00 | ID256 , <i>Electrical Resistance-Based Fatigue Damage Evaluation in Full Forward Rod Extruded 16mncrs5 Steel</i> , Lukas Maximilian Sauer, Lars Andree Lingnau, Frank Walther |
| Coffee break | |
| 11:20-11:40 | ID285 , <i>Laser Ultrasound Combined with Image-Based Analysis for Simultaneous Evaluation of Sound Velocity and Thickness</i> , Hongjun Sun, Keita Ozaki |
| 11:40-12:00 | ID544 , <i>Ceramic Coil Design for High Temperature EM Measurements in a Differential Scanning Calorimeter</i> , John Wilson, Mohsen Jolfaei, Adam Fletcher, Lei Zhou, Carl Slater, Claire Davis, Anthony Peyton |
| 12:00-12:20 | ID556 , <i>Enhancing Commercial Differential Scanning Calorimetry (DSC) with Embedded Electromagnetic Sensing for In-Situ Monitoring of Tempering Martensite</i> , Mohsen A. Jolfaei, John W. Wilson, Adam D. Fletcher, Frank Zhou, Carl Slater, Claire Davis, Anthony J. Peyton |
| 12:20-12:40 | ID300 , <i>Ultrasonic Probes for Non-Destructive Testing Without Lead-Based Piezoceramics?</i> , Andreas Mück, Mark Achtenberg, Martin Fuchs |
| Lunch | |
| 14:00-14:20 | ID122 , <i>Parameters of the Magnetic Hysteresis Loop as Information Features for Non-Destructive Evaluation of the Mechanical Characteristics and Hydrogen Concentration of Ferrous Steels</i> , Valentyn Uchanin, Giuseppe Nardoni, Andriy Syrotyuk, Orest Ostash, Vitaliy Ovsyanykov |

AM.4 Materials Characterization

ROOM 11.A1

- 14:20-14:40 **ID512**, *High-Resolution 3D Ultrasonic Imaging of Defects with Various Shapes using Piezoelectric and Laser Ultrasonic System (PLUS)*, Yoshikazu Ohara, Yuto Fujikawa, Taiyo Sugi, Atsuhiko Hibi, Mitsuru Miyamoto, Takeyuki Okamura, Toshiyuki Suzuma
- 14:40-15:00 **ID345**, *Application of NDT Magnetic Property (Coercivity) Measuring Method for Indicating Mechanical State of Steel after Induction Pipe Bending*, Roman Solomakha, Connor O'Shea, Hennadii Bezlyudko
- 15:00-15:20 **ID367**, *CT-Based Investigation of Defect Evolution in Polymeric Components under Cyclic Mechanical and Hydrogen Pressure Loading*, Sarah Heupl, Julia Thalhammer, Bernice Mills, Menon Nalini, April Nissen, Johann Kastner
- Coffee break**
- 15:40-16:00 **ID343**, *Tomographic Reconstruction of the Subsurface Grain Structures in Polycrystalline Materials using Full-Waveform Inversion*, Fangyuan Wan, Jie Zhang, Anthony J. Mulholland
- 16:00-16:20 **ID383**, *Effect of Plastic Strain and Reloading Stress on the Acoustic Birefringence of a Martensitic Steel*, Zakariae Maazaz, Fabien Lefevre
- 16:20-16:40 **ID389**, *Non-Destructive Orientation and Elasticity Determination of the Gibeon Meteorite using Spatially Resolved Acoustic Spectroscopy*, Wenqi Li, Matt Clark, Richard J. Smith
- 16:40-17:00 **ID333**, *Evaluation of Material Properties of Plates with PAUT Using Particle Swarm Optimization Inversion Procedure*, Guillemette Ribay, Bengisu Yilmaz, Axel Thomas, Quentin Baudis, Arnaud Recoquillay
- 17:00-17:20 **ID420**, *Resonant Ultrasound Characterization of Materials in the ECOBALLIFE Project*, Florian Le Bourdais, Guillemette Ribay, Marie-Bénédicte Jacques

AM.1 Artificial Intelligence and Machine Learning

ROOM 11.A2

| | |
|---------------------|--|
| 9:00-9:20 | ID491 , <i>Assisted Data Analysis for Nondestructive Evaluation</i> , Eric Lindgren |
| 9:20-9:40 | ID102 , <i>AI-Powered Defect Recognition System for Magnetic Particle Inspection: Applications and Solutions in Automotive Component Testing</i> , Yang-Chieh Lin, Wei-Chia Cheng, Tsung-Chi Tang, Posheng Chiang |
| 9:40-10:00 | ID878 , <i>Towards Training-Free Surface Detection and Characterization for Metal Additive Manufacturing with Vision Foundation Model</i> , Chaoyu Dong, Hwee Ping Ng, Fang Cheng, Andrew Malcolm |
| 10:00-10:20 | ID126 , <i>Quantum k-Nearest Neighbors for Accelerated and Robust Damage Detection in Railway Bridge Structural Health Monitoring: A Case Study on KW51 Bridge</i> , Haniye Ghafouri Rouzbahani, Mohammad Omid Mamaghani, Ferdinand Pospischil |
| 10:20-10:40 | ID253 , <i>Towards Fully Automated Interpretation of Ultrasonic NDE Data for Carbon Fibre Reinforced Polymers using Multi-Model Machine Learning Frameworks</i> , Ehsan Mohseni, Vedran Tunukovic, Shaun McKnight, Gareth Pierce, Gordon Dobie, Charles MacLeod, Randika K.W Vithanage, Sandy Cochran, Tom O'Hare |
| Coffee break | |
| 11:00-11:20 | ID274 , <i>Generative AI in NDE: Connecting Human Expertise and Data for Enhanced Inspection Support</i> , Marco Induti, Carlo Romito, Stefano Cipolla, Oliver von Trzebiatowski, P. Goyal |
| 11:20-11:40 | ID211 , <i>Modeling and Reconstruction of Air-Coupled Ultrasonic Signals via CNNs</i> , Héctor Calás |
| 11:40-12:00 | ID239 , <i>Advancement of Eddy Current Testing for Ferromagnetic Heat Exchanger Tubes using a Multi-Coil Probe and AI</i> , Sakura Handa, Kazuaki Yoshie, Kazuki Karimai, Yoshihisa Maruyama |
| 12:00-12:20 | ID251 , <i>Combination of 3D FEM Model and Neural Network for Analysis of Conductive and Ferromagnetic Spots via Non Linear NDT Method</i> , Yasmine Gabi, Kevin Jacob, David Böttger, Bernd Wolter, Bernd Valeske |
| 12:20-12:40 | ID441 , <i>Real-Time Stiffness Characterization of Complex-Shaped Metal Parts by Vibrational Testing and Machine Learning</i> , Adil Han Orta, Sylvain Chabanet, Mathias Kersemans |
| Lunch | |
| 14:00-14:20 | ID318 , <i>Analyses of Advanced Bio-Composites using Acoustic Emission and Machine Learning</i> , Markku Tiitta, Valtteri Tiitta, Wen Jiang, Kirsi Immonen, Faisan Asad, Reijo Lappalainen, Laura Tomppo |

AM.1 Artificial Intelligence and Machine Learning

ROOM 11.A2

| | |
|---------------------|--|
| 14:20-14:40 | ID753 , <i>AI-Enhanced X-Ray Tomography for Quantitative Crack Characterization in Industrial Materials</i> , Sofiane Terzi, Duy Nguyen, Dajla Neffati, Awen Autret, Barbara Fayard |
| 14:40-15:00 | ID566 , <i>Fostering Collaboration and Enabling Development in AI4NDE: Available Opportunities and Activities</i> , Thiago Seuaciuc Osorio |
| 15:00-15:20 | ID762 , <i>Deep Learning-Based Spatial Coherence Estimation for Ultrasonic NDT</i> , Gabriel O. Vasconcellos, Matheus F. Dário, Tatiana de A. Prado, Daniel R. Pipa |
| 15:20-15:40 | ID768 , <i>Machine Learning-Driven Flaw Detection for Ultrasonic Pipe Inspections with Acoustic Lens</i> , Thiago E. Kalid, André E. Lazzaretti, Tatiana de A. Prado, Gustavo P. Pires, Daniel R. Pipa, Thiago A. R. Passarin |
| Coffee break | |
| 16:00-16:20 | ID388 , <i>An Explainable and Standards-Aware AI Framework for Automated Ultrasonic Inspection using Volumetric Learning, Compliance Encoding, and RAG-Based Reporting</i> , Vishwesh Vishwesh, David Böttger |
| 16:20-16:40 | ID715 , <i>YOLO-Based Detection of Small Inclusions in Radiographies of Composite Parts</i> , Ilyas El Younoui, Anne-Laure Mealiere, Axel Lecoeuvre, Nicolas Griselin |
| 16:40-17:00 | ID867 , <i>Edge AI Enabled In-Situ Multi-Modal NDE Framework using Computer Vision and Eddy Current Testing</i> , Lei Peng, Zhibo Zhang, Na Zhang, Yiming Deng |
| 17:00-17:20 | ID889 , <i>AI for Manual Ultrasonic Inspection</i> , Oskari Jessen-Juhler, Iikka Virkkunen, Thiago Seuaciuc-Osorio |

SS2 Human Centered NDE 4.0

ROOM 11.B1

| | |
|-------------|---|
| 9:00-9:20 | ID567 , <i>Human Factors and AI for NDE</i> , Thiago Seuaciuc Osorio |
| 9:20-9:40 | ID332 , <i>A Human-Centric Framework for Incremental and Active Learning in AI-Based Non-Destructive Testing</i> , Julen Mendikute, Jose Luis Lanzagorta, Irati Sanchez, Iratxe Aizpurua, Irantzu Ermina |
| 9:40-10:00 | ID780 , <i>Traceability of Manual NDT Scanning not using Encoded Scanners</i> , Jean-Philippe Merle, Jérôme Poguet |
| 10:00-10:20 | ID459 , <i>Personnel Qualification and Ethical Challenges in AI-Driven Automated Decision-Making</i> , David Gilbert |
| | Coffee break |
| 10:40-11:00 | ID709 , <i>Recommendations for the Human-Centred Implementation and Acceptance of Advanced Technologies in Non-Destructive Testing</i> , Marija Bertovic, Sophie Berretta, Christiane Trela |
| 11:00-11:20 | ID323 , <i>Augmented Reality in Aircraft Maintenance</i> , Judith Hartfill, Rahel Louise Schmied-Kowarzik, Andreas Wilken, Lina Kaschub, Rebecca Rodeck, Gerko Wende |
| 11:20-11:40 | ID599 , <i>Augmenting NDT: How XR Supports Data Acquisition, Interpretation, and Reporting</i> , Daniel Conniffe, Ruoxuan Zhu, Adam Fletcher, Anthony Peyton, Jim Skelton |
| 11:40-12:00 | ID779 , <i>Remotely Operated Inspection of Complex Surfaces without Programming using Flexible Wedges</i> , Jean-Philippe Merle, Jérôme Poguet |

Lunch

SS7 Railway

ROOM 11.B1

- 14:00-14:20 **ID690**, *A Comprehensive Technical Review of the Non-Destructive Methods for Rail Inspection*, Nasim Fallahi, Luigi Garibaldi
- 14:20-14:40 **ID640**, *Split-D Differential Eddy Current Probes for Evaluating Rolling Contact Fatigue Defects in Railway Rails*, Leandro Serraiocco, Javier Fava, Ramiro Gonzalez, Benicio Dominguez, Joaquin Rolla Napal, Marta Ruch
- 14:40-15:00 **ID713**, *UT Testing of Hollow Railway Axles - Presentation of the Boreaxle Machine BAT4*, Damiano Sallemi, Matteo Rosafio, Mauro Del Giorgio, Tiziano Buzzella, Marco Sarti
- 15:00-15:20 **ID354**, *NDT Methods for Crack Detection In Prestressed Concrete Railroad Sleepers*, Susanne Hillmann, Martin Friese, Jan Gräding, Gisbert Berger, Christoph Strangfeld, David Ringeloth, Aurimas Pukenas, Peter Krüger, Dirk Hofmann, Selina Vaculik, Mario Aguilar, Christian Linden
- Coffee break**
- 15:40-16:00 **ID507**, *Experimental Evaluation of Magnetic Flux Leakage for Railway Non-Destructive Testing*, Alessandro Paolo Daga, Luigi Garibaldi, Aldo Canova
- 16:00-16:20 **ID242**, *Advanced Ultrasonic Testing of Hollow Railway Axles by the Phased Array Technique*, Michele Carboni, Massimo Carminati, Pierluigi Donzelli, Riccardo Galvani, Lucio Rota
- 16:20-16:40 **ID687**, *New Concepts for Automated Railway Track Inspection*, Sven Lutter, Gerald Schneibel
- 16:40-17:00 **ID609**, *From Magnetic Particles to Eddy Current Inspection: How to Transform Surface Inspection*, Ondřej Doubek

SS6 Advances in inspection and NDT for assessment and maintenance of bridge structures

ROOM 11.B2

| | |
|---------------------|---|
| 9:00-9:20 | ID858 , <i>Fault Detection Algorithm Implementation for Distributed Sensor Networks</i> , Wilgo Moreira Nunes, Pedro M. Ferreira, João dos Reis |
| 9:20-9:40 | ID916 , <i>Deep Learning Based Multiclass Surface Damage Detection for RC Bridge Inspection using UAV Imagery</i> , Ali Siddique, Vittorio Prodromo, Antonio Bilotta |
| 9:40-10:00 | ID134 , <i>Potential of Muon Tomography in Bridge Investigations</i> , Ernst Niederleithinger |
| 10:00-10:20 | ID208 , <i>Enhanced SAFT Imaging of Concrete by Correlation-Based Reflector Classification</i> , Andrey Bulavinov, Dmitry Dolmatov, Viktor Shevaldykin, Roman Pinchuk, Andrey Samokrutov, Sergey Nazhestkin, Arezoo Imani |
| 10:20-10:40 | ID863 , <i>Model-Assisted Ultrasound Computed Tomography for PT Duct Inspections in Concrete Bridges</i> , David Sollberger, Fabian Lindner, Lion Krischer, Chris Udell, Christian Boehm |
| Coffee break | |
| 11:00-11:20 | ID773 , <i>Assessment of Void Volume in Post-Tensioning Ducts Via the Vacuometric Technique</i> , Roberto Felicetti |
| 11:20-11:40 | ID656 , <i>Analysis of Degradation Mechanisms in the Deck Slab of the Lussari Viaduct Using Non-Destructive Testing: a Ground Penetrating Radar Approach</i> , Giorgia Campori, Calogero Pio Di Vita, Diego Esposito, Daniele Insana, Antonio Mucciarone, Anna Marta Pozzi, Luca Ranedda, Davide Testa |
| 11:40-12:00 | ID677 , <i>Diagnostic Approaches for Evaluating Structural Improvement Interventions on Arch Bridges - Case study "Pasquarella" Bridge</i> , Diego Esposito, Giorgia Campori, Calogero Pio Di Vita, Daniele Insana, Antonio Mucciarone, Luca Ranedda |
| 12:00-12:20 | ID220 , <i>Research on Tension Pulsed Eddy Current Estimation Method for Steel Strand Using Analytical Model</i> , WenLong Zhang, XinJun Wu, LingSong He |
| 12:20-12:40 | ID754 , <i>Investigation of the Changes in the Mechanical Properties of Chloroprene Rubber (CR) under Thermal Oxidation Aging by Ultrasonic Techniques</i> , Pincheng Su, Violaine Tinard, Pierre François, Christophe Fond |
| Lunch | |
| 14:00-14:20 | ID897 , <i>Inspection Data Based Rapid Assessment of Corrosion in Reinforced Concrete Bridges</i> , Ali Siddique, Alejandro Pérez Caldentey, Antonio Bilotta |

SS6 Advances in inspection and NDT for assessment and maintenance of bridge structures

ROOM 11.B2

| | |
|-------------|---|
| 14:20-14:40 | ID270 , <i>Evaluation of Post-Tensioned Bridges with NDT Techniques</i> , Guy Rapaport |
| 14:40-15:00 | ID676 , <i>Residual Prestress in Post-Tensioned Concrete Structures: Review, Laboratory and In-Situ Experiments</i> , Antonio Mucciarone, Giorgia Campori, Calogero Pio Di Vita, Diego Esposito, Egidio Lofrano, Daniele Insana, Luca Ranedda |
| | Coffee break |
| 15:20-15:40 | ID814 , <i>Reconstruction of Prestressing and Shear Reinforcement Using the Non-Destructive GPR Technique – Application to a Gerber Beam Structure</i> , Daniele Insana, Giorgia Campori, Calogero Pio Di Vita, Diego Esposito, Antonio Mucciarone, Luca Ranedda |
| 15:40-16:00 | ID932 , <i>An Integrated Investigation Framework for Knowledge Enhancement in the Safety Assessment of a Historical RC Gerber Half-Joint Bridge</i> , Andrea Gennaro, Nicola Molon, Simone Ravasini, Marco Carlo Rampini, Nzeeh Roumia, Elisa Saler, Beatrice Belletti, Marco Di Prisco, Claudio Mazzotti, Gilberto Artioli, Antonio Bilotta, Francesca da Porto |
| 16:00-16:20 | ID650 , <i>Static and Dynamic Characterization of the Historic Truss Bridge over the Po River at Becca: A Comparative Analysis with the Results of the 1980s Investigation Campaign</i> , Calogero Pio Di Vita, Giorgia Campori, Diego Esposito, Daniele Insana, Antonio Mucciarone, Luca Ranedda |

AM.6 Numerical modeling

ROOM 11.C1

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|---------------------|--|
| 9:00-9:20 | ID201 , <i>Numerical Evaluation of High-Resolution Ultrasonic Imaging Algorithms for NDT Applications</i> , Mario Certo |
| 9:20-9:40 | ID429 , <i>Modelling Study of Surface Treatment on Eddy Current Testing: Influence of Geometry</i> , Edouard Demaldent, Audrey Vigneron, Olivier Ghibaudo, Alexandre Corazza, Julien Banchet |
| 9:40-10:00 | ID496 , <i>Consolidating Reliability of Guided Wave SHM through Simulation: Application on a Bolted Panel with Static Load</i> , Edouard Demaldent, Alexandre Imperiale, Arnaud Recoquillay, Pierre Calmon, Aurélien Rautureau, Paul Swindell |
| 10:00-10:20 | ID335 , <i>Random Walk Modelling of Hydrogen-induced Defects for Ultrasonic Response Analysis</i> , Liuyu Chang, Bruce Drinkwater, Jie Zhang |
| 10:20-10:40 | ID770 , <i>Vibration Analysis of a Structure with Plan Irregularity Using the Frequency Domain Decomposition Method</i> , Kevin Ortiz, Manuel Aspilcueta, Licelly Costilla |
| Coffee break | |
| 11:00-11:20 | ID476 , <i>Ultrasonic Wave Propagation Analyses in Cast Stainless Steel using Solidification Grain Structure Models Predicted by Cellular Automaton Approach</i> , Masaki Nagai, Yukinobu Natsume, Shan Lin, Kazuyuki Nakahata |
| 11:20-11:40 | ID618 , <i>Optimising Synthetic Data for Machine Learning Applications to Surface-Breaking Thermal Fatigue Cracks</i> , James Gaffney, Thomas Beckingham, Daniel Colquitt, Will Daniels, Stewart Haslinger |
| 11:40-12:00 | ID682 , <i>Application of Full Waveform Inversion to Ultrasonic Data</i> , Alina Suchkova, Ernst Niederleithinger |
| 12:00-12:20 | ID637 , <i>Benefits of New Finite Elements Models Available for Ultrasonic NDE Simulations</i> , Fabrice Fourcher, Jerome Dudous, Nicolas Leymarie, Edouard Demaldent, Stéphane Le Berre, Edward Ginzal |
| 12:20-12:40 | ID733 , <i>Complex Surfaces Profilometry by Splines Estimation</i> , Janice Estelle Ayisah, Nans Laroche, Clément Huneau, Sébastien Bourguignon, Jérôme Idier, Ewen Carcreff |
| Lunch | |
| 14:00-14:20 | ID222 , <i>Numerical Approach in the Design of Magnetic Particle Inspection Devices</i> , Michele La Bianca, Fontò Eleonora, Luca Giaccone, Fabio Freschi, Aldo Canova |

AM.6 Numerical modeling

ROOM 11.C1

- 14:20-14:40 **ID763**, *mini-auspex: a Python Library for Ultrasonic Data Import, Post-Processing and Imaging*, Giovanni A. Guarneri, Vinicius Pegorini, Daniel R. Pipa, Thiago E. Kalid, Tatiana de A. Prado, Gustavo P. Pires, Thiago A. R. Passarin
- 14:40-15:00 **ID765**, *Modeling and Removal of Electronic Crosstalk Effects in Ultrasound Signals via Deconvolution*, Fabio Z. Y. Wang, Tatiana de A. Prado, Thiago E. Kalid, Gustavo P. Pires, Glauber Brante, Daniel R. Pipa, Thiago A. R. Passarin
- 15:00-15:20 **ID398**, *Modelling and Simulation Use in X-ray Computed Tomography for NDT*, Marius Costin, Victor Bussy, Julie Escoda, Hermine Lemaire, Jitendra Singh Rathore, Adrien Stolidi, Anthony Touron
- Coffee break**
- 15:40-16:00 **ID288**, *Efficient Local Finite Element Simulation of Ultrasonic NDE with Application to Inspection Qualification*, Paul D. Wilcox, Nachman Malkiel, Anthony J. Croxford
- 16:00-16:20 **ID855**, *Digital Twins of Common Ultrasonic NDT Inspections Verified by Photoelastic Visualizations*, Paul Holloway, Lars Gebraad, Chris Udell, Christian Boehm
- 16:20-16:40 **ID899**, *Near- and Far-Field Delamination Monitoring in Metal-Composites using Acoustic-Active Fiber-Optic Sensing: A Numerical Framework*, Saurabh Gupta, Lalita Udpa, Mahmood Haq, Yiming Deng

SS16 Machine Learning for Thermographic Process Monitoring in NDT

ROOM 11.C2

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|---------------------|---|
| 9:00-9:20 | ID749 , <i>EPH-iFNO: Self-Evolving Physics-Attention Heads with Fourier Neural Operators for Virtual-Wave Inversion</i> , Qiuji Yi, Dong Wang, GuiYun Tian, Rocco Zito, Stefano Laureti, Peter Burgholzer, Marco Ricci |
| 9:20-9:40 | ID344 , <i>Internal Temperature Field Prediction Using Helmholtz-Informed Neural Networks</i> , Pengfei Zhu, Hai Zhang, Xavier Maldague |
| 9:40-10:00 | ID812 , <i>Prediction of Grain Orientation from Thermal Maps Using a Data-Driven and AI Approach</i> , Nishi Bhemani, Krishnan Balasubramanian |
| 10:00-10:20 | ID648 , <i>Modelling Heat Diffusion in Voronoi-Based Polycrystalline Materials using AI</i> , Nishi Bhemani, Thulsiram Gantala, Krishnan Balasubramanian |
| 10:20-10:40 | ID727 , <i>First Approach of IR Camera Calibration Dedicated to NDT Application</i> , Jean Nicolas Frouart, Samuel Maillard |
| Coffee break | |
| 11:00-11:20 | ID353 , <i>Detection and Staging of Hydrogen Induced Damage in Heat Exchanger Shells using Machine Learning Techniques</i> , Vyktintas Samaitis, Renaldas Raišutis, Aadhik Asokkumar |
| 11:20-11:40 | ID871 , <i>Optimizing Thermographic Fatigue-Limit Estimation: GPR, SVR, and Stacking Ensembles within the Two Curves Method for C45 Steel</i> , Raffaella Sesana, Luca Corsaro, Francesca Cura, Mohsen Dehghanpour Abyaneh, Mohammad Sadegh Javadi |
| 11:40-12:00 | ID743 , <i>Multi- and Hyperspectral Thermography for Inline Quality Assurance in Metal Additive Manufacturing</i> , Simon J. Altenburg, Alec Hilberg, Tina Walter, Philipp Peter Breese |
| 12:00-12:20 | ID670 , <i>Segmentation-Model-Based Detection of Hairline Cracks in Forged Steel Components</i> , Steve Simmert, Dominik Braun, Ingmar Jakobi, Feli Schanz, Mathias Hauptvogel |
| 12:20-12:40 | ID726 , <i>Periodical Checks for Industrial Applications of Active Thermography</i> , Samuel Maillard, Jean Nicolas Frouart, Benoit Lasjaunias, André Baillard, Florent Decultot |
| Lunch | |
| 14:00-14:20 | ID455 , <i>Non-Destructive Characterization and Evaluation of Adhesive Joints using Artificial Intelligence Tools</i> , Justina Šeštokė, Eglė Butkevičiūtė, Damira Smagulova, Elena Jasiūnienė |

SS16 Machine Learning for Thermographic Process Monitoring in NDT

ROOM 11.C2

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| 14:20-14:40 | ID584 , <i>Pioneering Turbine Blade Inspection: Inductive Thermography as a Game-Changing Alternative to Dye Penetrant Testing</i> , Matilde Labourdette, Rémy Drosson, Thomas Goursolle |
| 14:40-15:00 | ID621 , <i>Leveraging Physics-Constraint Encoder-Decoder Models and Masked Autoencoders for Infrared Temperature Prediction in Tokamaks</i> , Cheikh. M. B. Cisse, Roberto Miorelli, Marie-Hélène Aumeunier, Alexis Juven |
| 15:00-15:20 | ID807 , <i>Non-Invasive Characterization of Petrochemical Tanks via IR Thermography, Digital Twins and AI</i> , Eneko Aranguren, Raquel Fuente |
| 15:20-15:40 | ID173 , <i>Ways to Reduce Scan Time for Highest Resolution Computed Tomography Applications</i> , Andreas Fischer, Tobias Neubrand, Alexander Suppes, Eberhard Neuser |

Coffee break

SS22 Characterization & Monitoring of Material Degradation in Historical/Architectural Artefacts

ROOM 11.D1

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|---------------------|---|
| 9:00-9:20 | ID461 , <i>Revealing Hidden Structures in the Eastern Wall of Menkaure Pyramid using NDT Techniques</i> , Mohamed Elkarmoty, Khalid Helal, Polina Pugacheva, Thomas Schumacher, Mehdi Tayoubi, Christian U. Grosse, Hany Helal |
| 9:20-9:40 | ID216 , <i>Examination of Inlaid Alabaster Craftwork by Using Electromagnetic Waves</i> , Keisuke Kato, Kaori Fukunaga |
| 9:40-10:00 | ID574 , <i>Methodology for Monitoring Cracking in Historical Wattle-and-daub Ceiling Slabs Using Infrared Thermography</i> , Gianluca Cadelano, Alessandro Bortolin, Giovanni Ferrarini, Monica Volinia, Mario Giroto |
| 10:00-10:20 | ID714 , <i>Non-Destructive Assessment of Historic Concrete Elements Using GPR and Ultrasonic Tomography: NUK Case Study (Slovenia)</i> , Zala Žarkovič, Rok Bregar, Petra Šajna, Sabina Dolenc |
| 10:20-10:40 | ID728 , <i>Integration of Non-destructive Methods for Investigating the Conservation State of Fort Monte Antenne in Rome</i> , Paola Calicchia, Antonio Camassa, Giovanna Spadafora, Giulia Mazzoletti, Dario Foppoli |
| Coffee break | |
| 11:00-11:20 | ID485 , <i>Preservation of Medieval Churches Damaged by L'Aquila 2009 and Amatrice 2016 Earthquakes: Non-Destructive Techniques in Integrated Approach</i> , Danilo Ranalli, Claudia Durante, Gianfranco Totani |
| 11:20-11:40 | ID415 , <i>Analysis and Monitoring of the Covering of Loggia Palace at Brescia - Italy</i> , Dario Foppoli, Guido Giuliani, Patrizia Scamoni |
| 11:40-12:00 | ID952 , <i>Non-destructive Testing to Reveal the History of a 17th-century Building</i> , Giuliana Cardani, Michele Cerri, Claudia Tiraboschi, Marco Cucchi |
| 12:00-12:20 | ID454 , <i>NDT in Art: how NDT Techniques Reveal Hidden Features in Vermeer's Paintings</i> , David Gilbert |
| 12:20-12:40 | ID833 , <i>Spreading Non-Destructive Techniques Applied to Cultural Heritage: Initiatives for Schools</i> , Daniela Di Martino, Giulia Marcucci, Luisa Vigorelli |
| Lunch | |
| 14:00-14:20 | ID675 , <i>A Multi-scalar NDT Workflow for the Diagnostic Knowledge Project of Stratified Architectural Heritage</i> , Samuele Troja, Monica Volinia, Mario Giroto |
| 14:20-14:40 | ID914 , <i>Automatic Defect Detection in Canvas Painting Using Active Infrared Thermography and an Improved YOLOX Network</i> , Zhiyang Zhang, Hai Zhang |
| 14:40-15:00 | ID552 , <i>Use GPR Analysis for Diagnostic of Mural Paintings</i> , Alessia Francesca Napoli, Emanuele Marchetti |

SS22 Characterization & Monitoring of Material Degradation in Historical/Architectural Artefacts

ROOM 11.D1

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| 15:00-15:20 | ID607 , <i>Wooden Academic Heritage Preservation by Low-cost Digital Survey and Thermographic Analysis</i> , Martino Pavignano, Monica Volinia, Gianluca Cadelano, Mario Giroto, Maurizio Marco Bocconcino, Mariapaola Vozzola, Ursula Zich |
| | Coffee break |
| 15:40-16:00 | ID910 , <i>Hierarchical Infrared Thermography Framework for Ancient Timber Structures: from Solar-Induced Screening to Active Tomography</i> , Ylnuo Ding, Hai Zhang |
| 16:00-16:20 | ID912 , <i>A Pseudo-Line-Scanning Reconstruction Framework for Dynamic Infrared Inspection of Large-Scale Timber Structures</i> , Ylnuo Ding, Hai Zhang |
| 16:20-16:40 | ID911 , <i>High-Fidelity 3D Point Cloud Reconstruction of Weathered Stone Inscriptions via Modulated Lock-in Thermography</i> , Ylnuo Ding, Hai Zhang |
| 16:40-17:00 | ID913 , <i>Waveform-Optimized Active Infrared Thermography on a Yuan-Dynasty Stele in Ningbo</i> , Zhiyang Zhang, Hai Zhang |

AM.7 Structural Health Monitoring

ROOM 11.D2

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| 9:00-9:20 | ID125 , <i>New Method for Steel Coupon Development May Lead to a Standard for Residual Stress Monitoring</i> , Evangelos Hristoforou |
| 9:20-9:40 | ID152 , <i>Early Corrosion Detection in Jetty Pipelines using Automated Guided Wave Area Monitoring</i> , Keith Vine, Brian Pavlakovic, Thomas Vogt |
| 9:40-10:00 | ID392 , <i>Distributed Acoustic Sensing (DAS) for the Monitoring of Infrastructure – Challenges and Limitations</i> , Bianca Weihnacht, Mario Kuehmstedt, Jörn Augustin, Mareike Stephan, Tobias Gaul, Lili Tautz, Robert Neubeck |
| 10:00-10:20 | ID199 , <i>Advancing External EMAT-Based Tank-Floor Inspection through SH Waves and Machine Learning Analytics</i> , Kaleeswaran Balasubramaniam, Conrad Kummeler, Álvaro Pallarés Bejarano |
| 10:20-10:40 | ID308 , <i>Real-Time Subsea Cable Motion Monitoring via SSTDR</i> , Andrew Di Battista, Nathan Cartlidge, Tim Whitmore |
| Coffee break | |
| 11:00-11:20 | ID425 , <i>Dynamic Monitoring of Bridges and Viaducts</i> , Giorgio Sforza |
| 11:20-11:40 | ID479 , <i>Damage Localization in a Rod by Utilization of Guided Wave Mode Separation</i> , Anjaly Jayakumar Pillai, Pawel Kudela, Maciej Radzienski, Rohan Soman, Tomasz Wandowski |
| 11:40-12:00 | ID528 , <i>Integration of a Guided Wave-Based SHM System in a Full-Scale Structural Test</i> , Maria Moix-Bonet, Tim Behrens, Benjamin Eckstein, Daniel Schmidt, Peter Wierach |
| 12:00-12:20 | ID531 , <i>Development of a MEMS Energy-Harvesting Sensor for Corrosion Monitoring in RC Infrastructure</i> , Nicharin Nithimethaporn, Katsufumi Hashimoto, Makoto Iwasaki, Riko Inuma, Hiroyuki Mitsuya |
| 12:20-12:40 | ID596 , <i>Acoustic Emission Monitoring of Corrosion under Thermal Fluctuations</i> , Camilla Bahia Larocca, Denis Bogomolov, Mikhail Prokofyev, Armin Proyer, Alessandro Marzani, Luca De Marchi |
| Lunch | |
| 14:00-14:20 | ID169 , <i>Rapid Defect Detection in Composite Laminates using One-Dimensional Guided Waves and Unsupervised Convolutional Autoencoders</i> , Shain Azadi, Yoji Okabe, Valter Carvelli |
| 14:20-14:40 | ID678 , <i>Crack Luminescence Process - Early Fatigue Crack Detection by Riluminati</i> , Roman Dörn |

AM.7 Structural Health Monitoring

ROOM 11.D2

14:40-15:00

ID921, *Beyond Sensor Calibration: An Evolutionary Approach to Dynamic Structural Monitoring*, Giuseppe Mugnos, Elio Lo Giudice

15:00-15:20

ID691, *Non-Destructive Determination of Crack Size and Crack Growth in Butt Welds of Wind Turbines: AE, PAUT and ET in Vibration Fatigue Tests*, Sebastian Barton, René Gansel, Lea Feld, Mareike Collmann, Hans Jürgen Maier

15:20-15:40

ID924, *An Integrated Approach to the Structural Assessment of Steel Guyed Towers: The Case of the RAI Tower in Caltanissetta*, Elio Lo Giudice, Giuseppe Navarra, Giuseppe Mugnos, Giuseppe Catanzaro

Coffee break

M.1 Eddy Currents

ROOM 12.A

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| 9:00-9:20 | ID481 , <i>NDE of Mechanical Properties of Fatigue Damaged Austenitic Stainless Steel with ECT Signals</i> , Yinqiang Qu, Ke Deng, Hong-En Chen, Shejuan Xie, Zhenmao Chen |
| 9:20-9:40 | ID190 , <i>Subsurface Multi-frequency Eddy Current Inspection of Multilayered Riveted Aluminum Plates</i> , Nikolaos Poulakis, Apostolos Kotouzas, Vyrion Drosos, Maria Poulaki |
| 9:40-10:00 | ID522 , <i>Innovative Eddy Current Method and Probe for Detecting Defects in Any Orientation</i> , Federico Carere, Alessandro Sardellitti, Silvia Sangiovanni, Marco Laracca |
| 10:00-10:20 | ID193 , <i>New High Sensitivity Eddy Current Solution for Detection and Sizing Small Flaws</i> , Ghislain Morais, Angélique Raude |
| 10:20-10:40 | ID825 , <i>A General Methodology for the Identification of Invariant Features in Eddy Current Testing</i> , Vincenzo Mottola, Alessandro Sardellitti, Filippo Milano, Luigi Ferrigno, Marco Laracca, Antonello Tamburrino |
| Coffee break | |
| 11:00-11:20 | ID284 , <i>Advanced Eddy Current Evaluation for Thermal Damage Beneath Functional Coatings</i> , Irati Sanchez, Jose Luis Lanzagorta, Iratxe Aizpurua, Julen Mendikute, Julen Larrañaga |
| 11:20-11:40 | ID325 , <i>Eddy Current-Based NDT of Braided Multistrand Carbon Fiber Rigging</i> , Francisco Bolinhas, Juanjo de la Cuesta, Seth Cooley, Telmo G. Santos, Miguel A. Machado |
| 11:40-12:00 | ID355 , <i>From PT to ECA: A Simulation-driven Study on Key Parameters in Eddy Current Array Inspection Method Development</i> , Raju Yalagada, Silvère Barut, Denis Premel |
| 12:00-12:20 | ID381 , <i>Adapting Conventional Dual-Channel Eddy Current Instruments for Flexible Array Operation in Harsh Environments</i> , Alexis Hernandez, Gordon Dobie, Charles MacLeod, Iang Gough, John Hansen, Ehsan Mohseni |
| 12:20-12:40 | ID396 , <i>NV-NDE: a Novel Technique Using Quantum Diamond Sensors for Non-destructive Evaluation of Metals</i> , Baptiste Vindolet, Guillaume Bourcin, Hoai Nam Nguyen, Thomas Hingant |

Lunch

M.1 Eddy Currents

ROOM 12.A

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|---------------------|--|
| 14:00-14:20 | ID408 , <i>Assessment of Through-Transmission Eddy Currents for Subsurface Crack Detection</i> , Catalin Mandache, Leo Dionne, Antal Prigli |
| 14:20-14:40 | ID413 , <i>Quantitative Evaluation of Crack Depth in Ceramic Matrix Composites Using Eddy Current Testing</i> , Kohei Minoura, Tetsuya Uchimoto, Hiroyuki Kosukegawa, Shuhei Hashimoto, Kohei Kudo, Mitsuo Hashimoto, Toshiyuki Takagi |
| 14:40-15:00 | ID433 , <i>Local Resistance Evaluation of Printed Electronics During Jet-Dispensing and IR-Sintering Using Eddy Current and Laser Profilometry with Temperature and Lift-Off Compensation</i> , Nataliia Gromberg, Lukas Boxberger, Till Schulze, Henning Heuer, Welf-Guntram Drossel |
| 15:00-15:20 | ID478 , <i>Analysis of Transmit-Receive Coil Spacing for Phase-Based Depth Characterization in Eddy Current Array</i> , Ana Carolina P. S. Brandão, Iane de A. Soares, Caio Henrique A. de Souza, Laudemiro Nogueira Jr., Carlos B. Eckstein, Gabriela R. Pereira |
| 15:20-15:40 | ID525 , <i>An Innovative ECT Method for Advanced Corrosion Detection and Characterization</i> , Alessandro Sardellitti, Marco Laracca, Angelo D'Aguanno, Vincenzo Mottola, Filippo Milano, Luigi Ferrigno, Antonello Tamburrino |
| Coffee break | |
| 16:00-16:20 | ID716 , <i>Principle and Instrument of Corrosion Detection by Electromagnetic Imaging under the Concrete Overlayer</i> , XinJun Wu, JiaWei Gong, FangHao Zhai, WenLong Zhang |
| 16:20-16:40 | ID776 , <i>EddyGlove: A Wearable Eddy Current Testing Device for Defect Detection in Confined Environments</i> , Erhui Sun, Abdelkhalick Mohammad, Andres Gamos Madrigal, Dragos Axinte, Andy Norton |
| 16:40-17:00 | ID806 , <i>Eddy Current Testing of a Carbon Fiber Blade Edge</i> , Marie Rudolfova |
| 17:00-17:20 | ID834 , <i>Impedance Level-Set Curves in Eddy Current Testing of Conductive Plates under Unknown Coil Tilt</i> , Leonardo Max Golušin, Darko Vasić |

SS3 From Limited Data to Reliable Diagnostics

ROOM 12.B

| | |
|---------------------|--|
| 9:00-9:20 | ID119 , <i>Prediction of Structural Integrity Assessment Parameters from Ultrasound Images via Machine Learning</i> , Junlei An, Qiang Liu, Nicolas Larrosa, Jie Zhang |
| 9:20-9:40 | ID135 , <i>Physics-Driven Neural Network Solver for Electromagnetic Non-Destructive Evaluation</i> , Yutong Du, Zicheng Liu |
| 9:40-10:00 | ID151 , <i>Simulation-Based Neural Networks for Ultrasonic Testing</i> , Channa Nageswaran |
| 10:00-10:20 | ID179 , <i>Manipulating Ultrasonic Data from Test Pieces to Create Blind Datasets</i> , Christopher Curtis |
| 10:20-10:40 | ID229 , <i>Quantifying Corrosion Progression Through Text-Image Embeddings with CLIP</i> , Ramon Helwing, Frank Walther |
| Coffee break | |
| 11:00-11:20 | ID235 , <i>Probabilistic Deep Learning for Reliable Diagnostics using Guided Wave</i> , Jaebeom Lee, Clément Fisher, Seungjun Lee, Choon-Su Park, Pierre Calmon |
| 11:20-11:40 | ID266 , <i>Defect Detection AI for Casting in Radiographic Testing based on Image Simulation</i> , Haruka Ikeda, Seiya Inagi, Kazuchika Iwami, Sadato Hiratsuka |
| 11:40-12:00 | ID416 , <i>Correlation-Based Memory Updating for Continual Learning under Limited Data Conditions</i> , Chanwon Park, Jaebeom Lee, Young-Joo Lee |
| 12:00-12:20 | ID452 , <i>Crack Characterization Using Multi-Scale Scattering Matrix Denoising Extrapolation and Optimal Scale Selection</i> , Yiliang Hu, Long Bai |
| 12:20-12:40 | ID580 , <i>Defect Classification in Wire Arc Additive Manufacturing via a Semi Supervised Teacher-Student Model</i> , Maedeh Gourakani, Carmelo Mineo, Donatella Cerniglia, Andrea Bertazzo, Federica Tiso, Giovanni Avallone |
| Lunch | |
| 14:00-14:20 | ID615 , <i>Embedded Deep Learning System for Reliable Operator Support in TFM-based Weld Inspection</i> , Robin Guyon, Matthew Newson, David Roué, Auguste Gervais, Roberto Miorelli, Clément Fisher |
| 14:20-14:40 | ID736 , <i>Physics Based Synthetic Data Generation for Non-Destructive Testing Applications</i> , Christophe Reboud, Roberto Miorelli, Anthony Touron, Nicolas Leymarie |
| 14:40-15:00 | ID725 , <i>Training 3D AI models for PAUT: Performance, Data Needs, and Deployment Considerations</i> , Richard Rhéaume |

SS3 From Limited Data to Reliable Diagnostics

ROOM 12.B

| | |
|-------------|---|
| 15:00-15:20 | ID731 , <i>Efficient Transformers for X-Ray NDT in Limited Data Scenarios</i> , Ihssane Ghalas, Jennifer Vandoni |
| | Coffee break |
| 15:40-16:00 | ID642 , <i>Generating Synthetic Ultrasonic Testing Data with Deep Learning: Comparing Simulated and Deep Learning-Based Flaw Responses</i> , Caleb Watson |
| 16:00-16:20 | ID803 , <i>Physics-Informed Filters for Reconstructing Missing Data in Ultrasonic Guided Wavefields</i> , Michael MacIssac, Amanda Beck, Woohyun Eum, Charlie Tran, Joel Harley, Ghatu Subhash |
| 16:20-16:40 | ID815 , <i>The Applicability of Virtual Flaw Data Augmentation across NDE Modalities</i> , Topias Tyystjärvi, Oskar Siljama, Tuomas Koskinen, Oskari Jessen-Juhler, Iikka Virkkunen |
| 16:40-17:00 | ID894 , <i>1D-CNN for Automated Characterisation of Thermal Fatigue Cracks</i> , Thomas Beckingham, Jason F. Ralph, Stewart G. Haslinger, James Gaffney, Daniel Colquitt, Peter Huthwaite, Mike Lowe |

M.5 Ultrasonics

ROOM 12.C

| | |
|---------------------|---|
| 9:00-9:20 | ID551 , <i>Hybrid Multiscale Attention-Based Super-Resolution for Real-Time Transcranial Ultrasound</i> , Aryaz Baradarani, Kiyanoosh Shapoori, Saghar Farhangfar, Eugene Malyarenko, Juri G. Gelovani, Roman Maev |
| 9:20-9:40 | ID156 , <i>Imaging and Sizing of Real SCC Using FMC/TFM and PCI</i> , So Kitazawa, Hirofumi Ouchi, Isao Yoshida |
| 9:40-10:00 | ID175 , <i>A Circumferential Radially Magnetized EMAT for High-Temperature Equipment</i> , Siyu Wang, Fangji Gan, Bo Zhao, Jiubin Tan |
| 10:00-10:20 | ID207 , <i>New Method and Mobile Testing System for Inspecting Light Poles and Corrosion Under Pipe Supports using Guided Ultrasonic Waves</i> , Roman Pinchuk, Andrey Bulavinov, Ralf Birringer |
| 10:20-10:40 | ID212 , <i>Advanced Ultrasonic Imaging for Hardening Depth Measurement</i> , Héctor Calás, Nans Laroche, Cyril Thibault, Gavin Dao, Bjørn Meerwald, Søren Elmose |
| Coffee break | |
| 11:00-11:20 | ID748 , <i>Reducing Inspection Ambiguity from Degraded A-Scans in Ultrasonic Spot Weld Analysis</i> , Aryaz Baradarani, Roman Maev |
| 11:20-11:40 | ID752 , <i>Embedded Super-Resolution Framework for Ultrasonic Spot Weld Inspection</i> , Aryaz Baradarani, Roman Maev |
| 11:40-12:00 | ID237 , <i>Advanced Ultrasound Methods for HTHA Inspection</i> , Stéphan Couture |
| 12:00-12:20 | ID271 , <i>Inspection for SCC in Uncoated Austenitic Stainless Steel</i> , Mark Jones |
| 12:20-12:40 | ID283 , <i>Case Study - Inspection of Weld Backing Plate</i> , Stéphan Couture |
| Lunch | |
| 14:00-14:20 | ID526 , <i>Factors Influencing Corrosion Rate Estimations focusing on Image Stitching on Ultrasound Data</i> , Alexandru Nichita, Frederic Cegla |
| 14:20-14:40 | ID309 , <i>CIVA Scan Plan: a Generic Framework for Ultrasonic Coverage Evaluation and Inspection Plan Optimization</i> , Stéphane Le Berre, Karim Jezzine, Julien Banchet, Patrice Pinto, William Mathieu |
| 14:40-15:00 | ID339 , <i>Seven Years of Innovation in Binary Ultrasonic Imaging for NDT</i> , Pierre Bélanger, Guillaume Painchaud-April, Alain Le Duff, Baptiste Gauthier, Tony Rasolonirina, Aurélien Thon, Rafaël Niddam |
| 15:00-15:20 | ID349 , <i>Ultrasonic Evaluation of Equivalent Stress in Bolts Using Acoustic Birefringence</i> , Tianxiang Ge, Jiaxin Li, Bo Zhao |
| Coffee break | |

M.5 Ultrasonics

ROOM 12.C

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|-------------|---|
| 15:40-16:00 | ID539 , <i>Development of an Ultrasonic Inspection Tool for the Evaluation and Monitoring Offshore Pipelines with Internal HDPE Coating</i> , Marcella Grosso Lima, Thiago T. M. Neves, Heloisa Althoff, Daniel Braga, João Pedro M. Casacão, Cesar G. Camerini, Gabriela R. Pereira |
| 16:00-16:20 | ID350 , <i>Refractories under Observation: Comparison of Air-coupled Ultrasound Testing and Computed Tomography</i> , Yury Golitsyn, Ralf Steinhausen |
| 16:20-16:40 | ID375 , <i>Ultrasonic NDT of a Multipass Austenitic TIG Weld: Challenges Related to Welding Position</i> , Simon Delmotte, Cécile Gueudré, Marie-Aude Ploix, Jean-Christophe Vallée, Gilles Corneloup |
| 16:40-17:00 | ID391 , <i>Probability of Detection of an Automated Ultrasonic Testing Inspection System in the Seamless Pipe Industry</i> , Fabien Lefevre, Bada Ndao, Olivier Lazzari, Daryl Ouedraogo, Bastien Clausse, Fabrice Foucher |

SS4 Applications of AI for Image Evaluation in Radiographic Testing

ROOM GS A

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|---------------------|---|
| 9:00-9:20 | ID197 , <i>Vision–Language Model Assisted Interpretation in Radiographic Welding Defect Evaluation</i> , Haoyu Wen, Baoxin Zhang, Xuefeng Zhao, Juntao Wu, Jiajia Liu, Wangwang Liu, Ruotong Zhang, Hao Qiu, Xinghua Yu |
| 9:20-9:40 | ID342 , <i>X-Ray Defect Recognition – Reliable and Efficient with AI Support</i> , Christopher Zepp |
| 9:40-10:00 | ID553 , <i>Lightweight Super-Resolution Enhanced YOLOv8 for Improving Consistency in Radiographic Defect Detection of Titanium Alloy Weld Seams</i> , Zhiwei Zhang, Jingzhao Wang, Chao Zhang, Xinyan Wang, Xuwu Chai, Jingyuan Gao, Xiaotong Liu, Bingyang Wang |
| 10:00-10:20 | ID585 , <i>Fully Autonomous Defect Detection in 3D-CT Data using the Example of 3D Metal Printing</i> , Sven Gondrom-Linke, Tiago Ramos |
| 10:20-10:40 | ID689 , <i>Projection-Domain Defect Segmentation for Accelerated Quality Assessment in Industrial Computed Tomography</i> , Tim Schanz, Robin Tenscher-Philipp, Martin Simon |
| Coffee break | |
| 11:00-11:20 | ID721 , <i>X-Ray Digital Radiography and Computed Tomography: Investigation of Defect Detection Capabilities with Conventional and Artificial Intelligence Solutions - A Case Study in the Aerospace Industry</i> , Valentina Aloisi, Stephan Tschechne, Edson Costa-Santos, Christian Wojek |
| 11:20-11:40 | ID859 , <i>CT Based Deep Learning and Physics-Informed Surrogate Models for Structural Integrity Evaluation</i> , Martin Simon, Tim Schanz, Robin Tenscher-Philipp |
| 11:40-12:00 | ID915 , <i>Automated Defect Recognition in Solid Rocket Motor Manufacturing: Reconciling AI Performance Metrics with ECSS POD Requirements for Digital Radiographic Inspection of Solid Rocket Motors</i> , Domenico Telesca, Liberata Furente, Alessio Franchina |
| 12:00-12:20 | ID489 , <i>Applications of AI in Non-Destructive Examinations</i> , Teodor Tranca, Mircea Tranca, Raimund Zeman, Cezar Petru Ardeleanu Blaga |

Lunch

SSII Neutron and other non-destructive nuclear techniques for heritage science

ROOM GS A

- 14:00-14:20 **ID593**, *Neutron and X-Ray Tomography for Non-Destructive Characterisation of Archaeological Iron Artefacts and Assessment of Conservation Treatment*, Laura Cristina, Ocson Cocen, Seren Azad, David Mannes, Anders Kaestner, Laura Brambilla
- 14:20-14:40 **ID673**, *Neutron-Based Methods for Heritage Science: a Case Study on a Nuragic Figurine*, Matteo Cataldo, Massimiliano Clemenza, Sylvia Britto, Antonella Scherillo, Nadia Canu, Giulia Marcucci, Valeria Sipala, Bruno Billeci, Piernicola Oliva
- 14:40-15:00 **ID700**, *Muonic Atom X-Ray Emission Spectroscopy (μ XES) for Cultural Heritage: the INFN-CHNet Experience*, Paola Monza
- 15:00-15:20 **ID755**, *Provenance Investigation of Cultural Heritage Materials with Ion Beam Analysis*, Marta Magalini, Laura Guidorzi, Alessandro Re, Alessandro Lo Giudice
- Coffee break**
- 15:40-16:00 **ID772**, *Calibration of Bragg Edge Neutron Transmission Analysis and Characterization of Ancient Bronze Mirrors from Magna Graecia*, Matilde Dematteis, Miriana Marabotto, Alessandro Re, Alessandro Lo Giudice, Laura Guidorzi, Marta Magalini, Francesca Tansella, Chiara Garagiola, Sylvia Britto, Rangi Ramadhan, Francesco Grazi, Diego Elia, Valeria Meirano, Fabrizio Sudano, Elena Rita Trunfio, Daniela Di Martino
- 16:00-16:20 **ID792**, *Unlocking Hidden Material Signatures through Neutron Resonance Transmission Imaging*, Giulia Marcucci, Daniela Di Martino, Costanza Cucini, Maya Musa, Maria Pia Riccardi, Antonella Scherillo
- 16:20-16:40 **ID843**, *Non-Invasive High-Resolution Neutron Tomography for the Study of Filigree Decoration of the Chiaravalle Cross*, Luisa Vigorelli, Floriana Salvemini, Klaud Jakubowski, Mitra Safavi-Naeini, Giulia Marcucci, Costanza Cucini, Maria Pia Riccardi, Daniela Di Martino

SE.2 ICNDT, NDT Frontiers

ROOM GS C

- 9:00-9:20 **ID149**, *Breaking Barriers in NDE: AI-Enhanced Solutions for Future Smart NDE*, Roman Maev
- 9:20-9:40 **ID172**, *Laser Ultrasound for Dynamic Rail Base Inspections*, Shant Kenderian, Anish Poudel
- 9:40-10:00 **ID273**, *Supporting Sustainable Manufacture and Through-Life Maintenance of Structures Through NDT Value Considerations*, Gareth Pierce
- 10:00-10:20 **ID477**, *Toward NDT Digitalization: Challenge to Correlating Inspection Locations with NDT Data*, Makoto Ochiai, Setsu Yamamoto
- Coffee break**
- 10:40-11:00 **ID504**, *AI in NDT: Hype, History, and the Case for Reluctant Adoption*, Glenn Tubrett
- 11:00-11:20 **ID751**, *Advancing NDE Qualification Requirements in the Era of Intelligent Inspection*, David Gilbert
- 11:20-11:40 **ID872**, *Defect Initiation and Propagation in GFRP Ring through Multi-Physics Simulation and Acoustic Emission Monitoring*, Oludare Amos Solademi, Judith Abolle-Okoyeagu, James Njuguna
- 11:40-12:00 **ID900**, *CWT-Informed Deep Learning Framework for Intelligent Interpretation of Guided Wave Scattering in Hybrid Laminated Structures toward NDE 5.0*, Saurabh Gupta, Sujoy Mondol, Lalita Udpa, Mahmood Haq

Lunch

WEDNESDAY 17 JUNE

10:00-11:30
Coffee Break

12:30-14:00
Lunch

15:30-16:30
Coffee Break

AM.4 Materials Characterization

ROOM 11.A1

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| 9:00-9:20 | ID488 , <i>Characterization of Microstructured Steels: from Bulk Waves to Guided Waves Radiation</i> , Jordan Barras, Vincent Dorval, Nicolas Leymarie, Alexandre Imperiale, Edouard Demaldent |
| 9:20-9:40 | ID524 , <i>Simultaneous Estimation of Multiple Parameters of Metallic Samples via Eddy Current Testing</i> , Alessandro Sardellitti, Vincenzo Mottola, Filippo Milano, Luigi Ferrigno, Antonello Tamburrino, Marco Laracca |
| 9:40-10:00 | ID501 , <i>Analysis of Chemical Composition Effect on Electromagnetic Sensor Response during Steel Phase Transformation on the Run Out Table</i> , Esra Kaderli, Lei Zhou, Carl Slater, Ian Gibson, Claire Davis |
| 10:00-10:20 | ID334 , <i>Spatially Resolved Acoustic Spectroscopy: from Hard to Soft Materials Elastic Characterisation</i> , Rafael Fuentes-Dominguez, Samuel Karet, Salvatore La Cavera III, Alan McIntyre, Richard J. Smith |
| 10:20-10:40 | ID655 , <i>Ultrasonic Velocity-Based Non-Destructive Characterization of Heat-Treated Additively Manufactured 18Ni300 Maraging Steel</i> , Ibrahim Aydin, C. Hakan Gür |
| Coffee break | |
| 11:00-11:20 | ID781 , <i>Understanding the Effects of Crystallographic Texture and Pore Morphology on Ultrasound Wave Propagation in Laser Powder Bed Fused 316L Stainless-Steel</i> , Antonio Brozicevic, Paul Hooper, Bo Lan |
| 11:20-11:40 | ID801 , <i>Magnetic Hysteresis Parameters as Non-Destructive Indicators of Microstructure in DP600 Steel after Controlled Thermal Cycles</i> , Ane Martinez-de-Guerenü, Mikel Cuenca-Ariza, Iosu Aramendi, Amaia Iza-Mendia, Denis Jorge-Badiola |
| 11:40-12:00 | ID819 , <i>FPGA-Based Non-Destructive Measurement System for Fast and Accurate Estimation of Thickness and Electrical Conductivity of Metallic Plates</i> , Simone Palazzo, Vincenzo Mottola, Giovanni Canale Parola, Luigi Ferrigno, Alessandro Sardellitti, Antonello Tamburrino, Francesco Velardi, Annunziata Sanseverino |
| 12:00-12:20 | ID860 , <i>Acoustic Emission Monitoring of Hydration Processes in Cementitious Suspensions and Systems</i> , Eleni Korda, Dimitrios Aggelis, John L. Provis |
| 12:20-12:40 | ID922 , <i>Monitoring and Control of Hydration Heat Development in Massive Concrete Pours</i> , Carol Li Calzi |

Lunch

AM.4 Materials Characterization

ROOM 11.A1

- 14:00-14:20 **ID937**, *Acoustic Emission Characteristics of Damage Mechanisms in Carbon Fiber Reinforced Polymer Materials*, Keuntae Park, Sangwoo Kim
- 14:20-14:40 **ID360**, *Detecting α' -Martensite in 316L Austenitic Steels with Magnetic NDT Technologies*, H el ene Petitpr e, Yves Armand Tene Deffo, Baptiste Vindolet, Daniella Guedes-Sales, Kerian Wegerhoff, Benjamin Ducharne, Thomas Hingant
- 14:40-15:00 **ID950**, *Dual-Sensor Electromagnetic Non-Destructive Testing for Material State Assessment of Different Quenched and Tempered Steels in the Context of Circular Production*, Mehdi Khabou, Volker Schulze, Stefan Dietrich
- 15:00-15:20 **ID890**, *Buried Corrosion Imaging in Magnetic Plates by Electrical Resistance Tomography*, Vincenzo Mottola, Joseph Corcoran, Luigi Ferrigno, Peter B. Nagy, Antonello Tamburrino

Coffee break

M.7 Tomography

ROOM 11.A2

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| 9:00-9:20 | ID180 , <i>Procedural Design of an Industrial X-ray Computed Tomography Machine for Educational Purposes</i> , Eleonora Fontò, Egidio Angelo Gallicchio, Filippo Maria Bagnasco, Chiara Terrone, Alex Aiello, Aldo Canova |
| 9:20-9:40 | ID132 , <i>Aircraft High-pressure Blade Dimensional Tomography: Application Case for an Advanced Deep Segmentation Method</i> , Phileas Guégan, Patrick Fuchs, Nicolas Coutant, Clément Remacha |
| 9:40-10:00 | ID150 , <i>Determination of Measurement Uncertainty in X-ray Computed Tomography through Simulation - the CTSimU3 Project</i> , Stefan Kasperl, Frederic Ballach, Markus Bartscher, Carsten Bellon, Fabrício Borges de Oliveira, Matthias Braun, Burhan Dogan, Matthias Fleßner, Patrick Fuchs, Olaf Günnewig, Tino Hausotte, Gerd-Rüdiger Jaenisch, Thomas Kleinteich, René Laquai, Nicole Maass, Thomas Mayer, Tamara Reuter, Mirko von Schmid, Alexander Suppes, Daniel Weiß |
| 10:00-10:20 | ID160 , <i>Ultrasonic Velocity and Strength Mapping of Concrete Structures using Elop Insight Scanner</i> , Kamal Raj Chapagain, Werner Bjerke, Taras Tyrsa, Emir Evlic |
| 10:20-10:40 | ID209 , <i>Quantum Computing as a Future Tool for three-dimensional X-ray Imaging and Image Processing: Latest Progress and Perspectives</i> , Theobald Fuchs, Anastasia Papadaki, Thomas Lang, Martin Blaimer, Anja Heim, Kilian Dremel, Dimitri Prjamkov, Markus Firsching, Stefan Kasperl |
| Coffee break | |
| 11:00-11:20 | ID372 , <i>Integration of Simulated and Experimental CT Data for Automated Defect Detection in Additive Manufactured Components</i> , Celia Vilches, Amalia Salinas, Miroslav Yosifov, Sascha Senck, Carlos Galleguillos |
| 11:20-11:40 | ID421 , <i>From Conventional Tomography to Laminography: Geometry-Specific Trajectory Optimization and Reconstruction Strategies</i> , Jitendra Singh Rathore, Victor Bussy, Marius Costin, Marie-Bénédicte Jacques |
| 11:40-12:00 | ID668 , <i>The Strategic Role of Computed Tomography in the Conduction of Failure Analysis</i> , Benedetta Oneda, Igor Giroletti, Stefano Rossi |
| 12:00-12:20 | ID707 , <i>Super-Resolution Microcomputed Tomography for Porous Aluminium Foams</i> , Sascha Senck, Lukas Nepelius, Patrick Weinberger, Markus Höglinger-Rauscher, Jonathan Glinz |

M.7 Tomography

ROOM 11.A2

12:20-12:40

ID750, *Logitom-casting: AI Powered Automated X-ray Tomography Processing Software for Quality Control*, Awen Autret, Limamou Gueye, Duy Nguyen, Sofiane Terzi, Valérie Kaftandjian, Sébastien Brzuchacz, Patrick Bouvet, Caroline Boudou, Barbara Fayard

Lunch

14:00-14:20

ID796, *Projection-Volume Hybrid Stitching for Large-Scale Synchrotron CT using a Vertical Fan-Beam Geometry*, Wataru Yamamoto, Yutaka Ohtake, Takumi Kimura, Hiroto Motoyama, Satoru Egawa, Gota Yamaguchi, Hidekazu Mimura, Yukie Nagai

14:20-14:40

ID817, *A Micro EIT Sensor for Process Tomography*, Antonio Affanni, Ruben Specogna, Francesco Trevisan, Antonello Tamburrino

14:40-15:00

ID821, *Application of NDT Technologies for Designing Food Textures*, Yukie Nagai, Kento Imani, Wataru Yamamoto, Yutaka Ohtake, Hiroto Motoyama, Satoru Egawa, Gota Yamaguchi, Hidekazu Mimura

15:00-15:20

ID851, *Unveiling CO₂ Uptake in a Metal-organic Frameworks (MOFs) Based Packed Bed by X-ray Computed Tomography*, Jorge Martinez-Garcia, Cedric Reichmuth, Damian Gwerder, Diponker Karmoker, Benjamin Fumey, Philipp Schuetz

15:20-15:40

ID856, *The Limitations of Applying Radiographic Criteria to CT Images in Non-destructive Testing*, Sebastien Brzuchacz

Coffee break

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| 9:00-9:20 | ID578 , <i>Evaluation of Eddy Current Testing Capabilities for Detecting Surface Flaws in Axles at the Manufacturing Stage</i> , Giovanni Corti, Claudio Rocchi, Fabio Turla, Francois Vicat |
| 9:20-9:40 | ID442 , <i>Pasawis – The innovative Wheel Set Inspection System</i> , Stefan Caspary, Christian Conrad, Angélique Raude |
| 9:40-10:00 | ID533 , <i>Non-Destructive Residual Stress Measurement in Railway Wheels by Using Ultrasound</i> , Matteo Rosafio, Damiano Sallemi, Mauro Del Giorgio, Tiziano Buzzella, Marco Sarti |
| 10:00-10:20 | ID148 , <i>Automated Maintenance for Rolling Stock - Safety and Reliability of Rail Wheels Due to Innovative NDT Technology and Robotics</i> , Daniel Werner, Frank Kahmann, Thomas Wuerschig, Andreas Franzen, Frank Henrix |
| 10:20-10:40 | ID277 , <i>Air-Coupled Impact-Echo for Non-Destructive Testing of Prestressed Concrete Sleepers</i> , Christoph Strangfeld, David Ringeloth, Moritz Sieber |
| Coffee break | |
| 11:00-11:20 | ID895 , <i>Integrated NDT Approaches for Characterizing Stud-Type Rail Defects: a Comparative Case Study</i> , Meirbek Mussatayev, Ruby Kempka, Roger Lewis, Ian Sinclair, Fernando Alvarez Borges, Mohammad Ali Fakih |
| 11:20-11:40 | ID252 , <i>Digital Eyes on the Axles and Wheels: Remote and Intelligent Magnetic Particle Inspection</i> , Simona Vettese, Michele Burei, Domenico Paladino |
| 11:40-12:00 | ID314 , <i>Self-Supervised Anomaly Detection in Extremely Imbalanced Ultrasonic Railway Data: An Adaptive Triplet-Center Approach</i> , Huiying Li, Timo Hartmann |
| 12:00-12:20 | ID745 , <i>Proactive Technical Monitoring in Local Public Transport Companies: Practices and Future Outlooks @ Azienda Trasporti Milanesi</i> , Giuseppe Cassinelli, Andrea Simino, Jihad Karaki |
| 12:20-12:40 | ID611 , <i>Fully Automated Ultrasonic Testing of Bearing Rings for Railway Applications</i> , Petr Žbánek |
| Lunch | |
| 14:00-14:20 | ID117 , <i>Evaluation of Alternative Broken Rail Detection Systems</i> , Anish Poudel, Survesh Shrestha |
| 14:20-14:40 | ID365 , <i>Research on Steel Rail Surface Rolling Defect Detection Using the Fusion of Inductive Thermography and Optical Imaging Technologies</i> , Kang Tian, Liaoyu Kou, Bo Zhao, Xiaorong Gao, Jianping Peng |

SS7 Railway

ROOM 11.B1

14:40-15:00

ID295, *A Diffusion-Based Unsupervised Framework for Wheelset Ultrasonic Defect Detection*, Qian Zhang, Fuben Zhang, Haoyu Ding, Ai Wang, Jianping Peng, Xiaorong Gao, Kai Yang

15:00-15:20

ID419, *Efficient Evaluation of Ultrasonic Phased Array Performance with Applications to Limited-Firing Scenarios*, Nachman Malkiel, Anthony J. Croxford, Paul D. Wilcox

Coffee break

SS10 Nonlinear Ultrasonics

ROOM 11.B2

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|---------------------|--|
| 9:00-9:20 | ID139 , <i>Nonlinear Wave Mixing Techniques to Characterize Materials</i> , Laurence J. Jacobs |
| 9:20-9:40 | ID163 , <i>Assessment of the Industrial Applicability of the Fundamental Wave Amplitude Difference Method for the Inspection of Welds</i> , Arthur Perrin, Ewen Carcreff, Sylvain Deutsch, Jonathan Peixoto |
| 9:40-10:00 | ID228 , <i>Theoretical Basis of the Non-Destructive Testing using Quaternion Algebra</i> , Sadataka Furui |
| 10:00-10:20 | ID238 , <i>Vibro-Ultrasonic Phased Array utilizing Local Defect Heating due to Nonlinear Phenomena for Crack Imaging</i> , Yoshikazu Ohara, Taketo Iijima, Toshiki Yoshikawa, Ryo Taniuchi, Akira Nagakubo, Łukasz Pieczonka, Koen Van Den Abeele |
| 10:20-10:40 | ID248 , <i>Monitoring Corrosion-Induced Damage in Concrete using Nonlinear Cross-Modulation and Acoustic Emission</i> , Markus Nilsson |
| Coffee break | |
| 11:00-11:20 | ID453 , <i>Multi-Mode Nonlinear Resonant Ultrasound Spectroscopy (MM-NRUS) for Quality Control of Additively Manufactured Metals</i> , Rui Zhang, Adil Han Orta, Mathias Kersemans |
| 11:20-11:40 | ID484 , <i>Acousto-Optic Tomography-Holography: a Novel, Sensitive and Quantitative NDT Method</i> , Yusheng Ma, Cedric Debusschere, Koen Van Den Abeele, Mathias Kersemans |
| 11:40-12:00 | ID509 , <i>Applications of Micro-Hollow Cathode as a Transmitter for Air-Coupled Ultrasonic Testing</i> , Mate Gaal, Dmitry Solodov, Narges Nazari |
| 12:00-12:20 | ID710 , <i>Nonlinear Coda Wave Interferometry: Preliminary Results into using Ambient Noise as Pump</i> , Shilan Shaabani, Pierric Mora, Parisa Shokouhi, Olivier Durand, Odile Abraham |
| Lunch | |
| 14:00-14:20 | ID835 , <i>Quaternion Theory for Nonlinear Ultrasonics Testing</i> , Serge Dos Santos, Sadataka Furui |
| 14:20-14:40 | ID847 , <i>Nonlinear Ultrasonic Characterization of Thermal-aging Effects on Contaminated Epoxy Polymers</i> , Do-Kyung Pyun, Jonghwan Park, Jaesun Lee |
| 14:40-15:00 | ID888 , <i>Non-Destructive Testing in (3+1)D and Optimal Path Search using Machine Learning Techniques</i> , Sadataka Furui |
| Coffee break | |

SS5 Integration of NDT into Building Information Models for Civil Structures and Infrastructures

ROOM 11.C1

- 9:00-9:20 **ID898**, *Mutual Validation of UPV, Schmidt Hammer, and Windsor Probe Tests for Estimating Compressive Strength of Earthquake-Damaged Concrete*, Mehmet Esen Eren, Cenk Fenerli
- 9:20-9:40 **ID902**, *Monitoring of a Prestressed Concrete Bridge During Phases of Induced Damage through Cutting of Prestressing Cable Strands*, Luca Ranedda, Giorgia Campori, Calogero Pio Di Vita, Diego Esposito, Daniele Insana, Antonio Mucciarone
- 9:40-10:00 **ID758**, *Integrating NDT Results into BIM for Social Housing Renovation: The ReHouse Project methodology*, Patrizia Aversa, Monica Misceo, Antonio Di Micco, Salvatore Tamburrino, Carla Di Biccari, Mattia Mangia, Emanuela Brai, Paola M. Albanese, Valeria Cascione, Vincenza A. M. Luprano, Angelo Corallo
- 10:00-10:20 **ID757**, *BIM Oriented Non-Destructive Testing of a Reinforced Concrete Building*, Gian Marco Revel, Rifat Seferi, Angelo Tatì, Elena Candigliota, Gloria Cosoli, Giuseppe Marghella, Anna Marzo, Saverio Mazzarelli, Concetta Tripepi, Vincenza A.M. Luprano
- 10:20-10:40 **ID904**, *A Model-Based Digital Twin for Structural Health Monitoring*, Soroosh Kamali, Antonio Palermo, Rosario Ceravolo, Alessandro Marzani
- Coffee break**
- 11:00-11:20 **ID427**, *Integration of UPV Data In H-BIM Environment for Strength Estimation and Monitoring of Building Stones in Architectural Heritage*, Emilia Vasanelli, Matteo Sticchi, Gianni Blasi, Daniele Perrone
- 11:20-11:40 **ID473**, *NDT, Building Models, Numerical Simulations, Image Fusion, and Virtual Reality – Case Study Investigating an Old Cultural Heritage Structure*, Christian U. Grosse, Mohamed Elkarmoty, Thomas Schumacher, Benoit Marini, Mehdi Tayoubi, Hany Helal
- 11:40-12:00 **ID482**, *Data-Driven Integration of Non-Destructive Envelope Diagnostics into HBIM for Energy-Aware Digital Models of Historic Buildings*, Domenico Palladino, Silvia Di Turi, Nicolandrea Calabrese, Angelo Massafra, Ugo Maria Coraglia
- 12:00-12:20 **ID643**, *Assessing Cultural Heritage with NDT: Julio Escámez's 'Principio y Fin' Mural*, Rodrigo Vargas, Mario Barrera, Gonzalo Bastias, Jaime Lisboa, M. Angela Benavente, Rodrigo Reyes

Lunch

SS14 Custom pulsing for ultrasonic NDT

ROOM 11.C1

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| 14:00-14:20 | ID167 , <i>Applications of Laser Diffuse Ultrasonic Phased Arrays for Three-dimensional Imaging Volumetric Defects</i> , Jun Li, Paul Wilcox, Jie Zhang |
| 14:20-14:40 | ID400 , <i>Enhanced Inspection Applications Using Modulated Ultrasonic Transmitters</i> , Thomas Würschig, Peter Fey, Walter deOdorico, Stephan Falter |
| 14:40-15:00 | ID582 , <i>Smart Contactless Nonlinear Ultrasound Testing – Research with Opto-Acoustical Arbitrary Waveform Excitation</i> , Florian Rudinger, Martin Wallner, Bernhard Reitingner |
| 15:00-15:20 | ID664 , <i>Improving Image Quality in Ultrasonic Inspection for Complex Material Using Custom Emission</i> , Ralph Abirizk, Ewen Carcreff |

Coffee break

SS24 Diagnostic for power plants

ROOM 11.C2

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|---------------------|--|
| 9:00-9:20 | ID657 , <i>Beyond Defect Detection: Integrating NDT with Fracture Mechanics for Life Extension</i> , Younho Cho |
| 9:20-9:40 | ID486 , <i>Addressing Uncertainties in Material Parameters for Nuclear Weld Imaging by the Development of an Adaptive Algorithm</i> , Ali Boukham, Jordan Barras, Maxance Marmonier, Nicolas Leymarie |
| 9:40-10:00 | ID540 , <i>Advanced Multivariate Anomaly Detection for Wind Turbines Using SCADA Data and Machine Learning</i> , Alessandro Paolo Daga, Alessandro Fasana, Luigi Garibaldi, Marco Gerbino, Luca Viale |
| 10:00-10:20 | ID550 , <i>Guidelines for Selecting 2D Matrix PA Probe Configuration for Weld Inspection: a Parametric Study</i> , Florin Turcu, Benoit Cabirol, Justin Wendorf, Alan Maclean |
| 10:20-10:40 | ID562 , <i>Criticality Criteria for Penstocks in Hydroelectric Power Plants: the Importance of Non-destructive Testing within a Component Evaluation Process</i> , Marco Lauro, Fabio Bettoni, Francesco Fornari |
| 10:40-11:00 | ID573 , <i>Possibilities of Inspections of NPP Tanks and Containment Liners</i> , Jaroslav Brom, Roman Nebel, Zbyněk Hlaváč1 |
| Coffee break | |
| 11:20-11:40 | ID608 , <i>Hybrid Data Fusion in Guided Wave Tomography: Bridging Defect Detection and Life Assessment</i> , Younho Cho, Igor Sakhabiev |
| 11:40-12:00 | ID591 , <i>PAUT Integrated Process for the Examination of Pipe Fitting Transition</i> , Kevin Xiang, Ludovic Pinier |
| 12:00-12:20 | ID684 , <i>Rotor-Bearing Hydrodynamic Modeling for Orbit-Based Diagnostics in Hydropower Units</i> , Bekhzod Abdullaev, Riccardo Barbera, Alessandro Paolo Daga, Luigi Garibaldi, Damiano Cuvato, Manuel Bonjean, Antonino Sannolo, Lorenzo Artaz |
| 12:20-12:40 | ID699 , <i>Grey-Box Digital Twin of a Pelton Hydropower Unit: Characterisation for Diagnostic Applications</i> , Riccardo Barbera, Alessandro Paolo Daga, Luigi Garibaldi, Damiano Cuvato, Manuel Bonjean, Antonino Sannolo, Lorenzo Artaz |
| 12:40-13:00 | ID798 , <i>Non-destructive Experimental Fault Diagnosis of Wind Turbine Drivetrain Components Using Tower-base Accelerometers</i> , Francesco Castellani, Davide Astolfi, Alessandro Canali, Alessandro Paolo Daga, Emiliano Sisinni, Alessandra Flammini |

Lunch

M.6 Shearography

ROOM 11.C2

14:00-14:20

ID171, *Spatial Phase Shifting Shearography for Industrial In-Line Quality Control*, Michael Schuth, Valentin Bastgen, Jessica Plaßmann

14:20-14:40

ID646, *Acoustic Shearography for Pipeline Inspection*, Lei Zhang, Zi Wen Tham, Yi Fan Chen

14:40-15:00

ID647, *Human-Technology Synergy in Non-Destructive Testing: Enhancing Reliability in Safety-Critical Sectors*, Karan Doshi

Coffee break

M.4 Radiographic Testing

ROOM 11.D1

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| 9:00-9:20 | ID632 , <i>Non-Destructive Evaluation of Rotary Friction Welded CuCrZr–AISI 316 Joints for Fusion Applications</i> , Fabio Bergamini, Alessandra Fava, Francesco Cognini, Giuseppe Barbieri, Angelo Tati, Paolo Rossi, Jeong-Ha You |
| 9:20-9:40 | ID918 , <i>Multi-Source Non-Destructive Evaluation of Carbon Steel Specimens Subjected to Static Tensile Loading</i> , Tomasz Chady, Jacek Grochowalski, Ryszard Łukaszuk |
| 9:40-10:00 | ID692 , <i>XXL High-resolution Digital Radiography: A Solution for Large-format Industrial Parts and Artworks</i> , Eusebio Solorzano, Daniel Cuadra-Rodriguez, Jorge Monzon de Castro |
| 10:00-10:20 | ID158 , <i>A Novel Multi-Frame Acquisition Approach for Wide-Field Imaging with Noise Reduction</i> , Philippe Duvauchelle, Angela Peterzol |
| 10:20-10:40 | ID240 , <i>Digital Radiography using CR and DDA for Welds</i> , Anmol Birring |
| Coffee break | |
| 11:00-11:20 | ID341 , <i>Dual-Temperature-CT: An Experimental Method for Three-Dimensional Polymer Characterization</i> , Jonathan Glinz, Sarah Heupl, Julia Thalhammer, Johann Kastner, Sascha Senck |
| 11:20-11:40 | ID387 , <i>Advances in X-ray CT of Large & Dense AM Components</i> , Nick Brierley, Karin Mrzljak, Mirko von Schmid, Moritz Weiß, Benjamin Zengerling, Olaf Günnewig |
| 11:40-12:00 | ID434 , <i>Simulation of Functional Ageing towards Failure Prediction of Dental Restorations - Investigating the Crown-cement-tooth Complex using Synchrotron x-ray Refraction Radiography</i> , Akshar Soni, Jonas Rechlin, Tobias Horbrügger, Itziar Serrano-Munoz, Franziska Schmidt, Manja von Stein-Lausnitz, Paul Zaslansky, Florian Beuer, Claudia Fleck, Andreas Kupsch |
| 12:00-12:20 | ID841 , <i>Development of a Compact and Scalable LINAC for Industrial X-Ray Applications</i> , Roberto Bonifazi, David Alesini, Luigi Faillace |
| 12:20-12:40 | ID740 , <i>In-line X-ray Inspection of Medium Density Fiberboard Mattress</i> , Nicola Zambelli, Silvia Zanettini, Nicola Sarzi-Amadé, Paolo Ferrarini, Davide Cavaliere, Antonella Travaglia, Brando Campestrini |
| Lunch | |
| 14:00-14:20 | ID407 , <i>European and International Standardization – a Strategic Tool for Stakeholders in NDT</i> , Franziska Baensch, Michael Schmitt, Daniel Müller, Uwe Zscherpel, Uwe Ewert |

M.4 Radiographic Testing

ROOM 11.D1

- 14:20-14:40 **ID298**, *Integration of AI-Based Automatic Defect Recognition (ADR) in X-ray Inspection of Castings*, Thomas Stocker, Bishwajit Mohan Gosswami, Rajib Kumar Chanda, Frank Sukowski, Tobias Schön
- 14:40-15:00 **ID326**, *Eliminating Artifacts and Boosting Efficiency with Varex TrueSpectrum Imaging*, Martin Hu, Michael Stamm, Jonathan Schock
- 15:00-15:20 **ID617**, *Numerical Modelling of Photon-Counting Detectors for Industrial Radiography Applications*, Roman Fernandez, Anthony Touron
- 15:20-15:40 **ID644**, *Stereo Digital Radiography Using Paired LDAs*, James Prindiville, Nguyen Luu, Randall Wilcox, Chinlee Wang

Coffee break

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| 9:00-9:20 | ID233 , <i>Application of Ultrasonic Phased Arrays for Detecting Discrepancies in Continuous Laser Welding</i> , Giuseppe Citro, Eric Colace, Dario Panaccione |
| 9:20-9:40 | ID275 , <i>Multimodal Non-Destructive Testing and Fusion: Case Study on Lightweight Aerospace Structures</i> , Nan Yue, Ana Menéndez Orellana, Ludovica Tromba, Raffaella Sesana, Christian U. Grosse |
| 9:40-10:00 | ID409 , <i>Eddy Current Testing for Subsurface Defects in Dissimilar Aluminum Alloy Joints Produced by Friction Stir Welding Method</i> , Izabela Kalemba-Rec, Sarken Kapayeva, John Hansen, Marek Bergander |
| 10:00-10:20 | ID440 , <i>How As-Built Surface Waviness Affects the Fatigue Performance of Steel Components Remanufactured by Wire Arc Additive Manufacturing</i> , Robin Motte, Matthieu Vander Linden, Dana Ghesquiere, Luka Steenssens, Anil Sudhakar, Kris Hectors, Wim De Waele |
| 10:20-10:40 | ID474 , <i>A Multimodal Non-Destructive Method for Local and Non-Local Characterization of Residual Stresses in Rolled Steel Plates</i> , Alain Lhémy, Flavien Agon, Sarah Vincent, Julien Moine, Quang Anh Vu, Kerian Wegerhoff, Fan Zhang, Laurent Daniel, Abdellahi Abderahmane, Mathieu Domenjoud, David Quidort, Guillaume Cousin, Antoine Proust |
| Coffee break | |
| 11:00-11:20 | ID497 , <i>Ultrasonic Imaging of Flaws in Thick-Walled Impeller Test Block Using FMC-TFM and PWI</i> , Prashanth Kumar Chinta, Robert Peip, Stephan Falter, Martin Spies, Giovanni Zappavigna, Lorenzo Parrotta |
| 11:20-11:40 | ID658 , <i>Applications of Pulsed Eddy Current Testing (PECT) in Thickness Measurements on Components with Coatings or Insulation</i> , Alessandro Magni, Marco Casaril |
| 11:40-12:00 | ID660 , <i>Re-Machine–Multimodal Inspection of Wind-Turbine Bolts for Reusability</i> , Kevin Schmitz, Thomas Schwender |
| 12:00-12:20 | ID663 , <i>Comparing Infrared Thermography and Digital Image Correlation for Fatigue Crack Initiation Detection in Cold-Spray Repaired Aluminium Specimens.</i> , Somsubhro Chaudhuri, Sruthi Krishna Kunji Purayil, Mauro Madia, Sören Nielsen |
| 12:20-12:40 | ID711 , <i>Eddy Current and Ultrasonic Near-Surface Flaw Detection in Additively Manufactured Ti-5Al-5V-5Mo-3Cr</i> , Brendan Halliday, Kate van Herpt, Mohammad E. Bajgholi, Allyson Eastmure, Fan Liu, P. Ross Underhill, Catalin Mandache, Thomas Krause |

Lunch

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| 14:00-14:20 | ID822 , <i>Multi-Modal Non-Destructive Evaluation of Lightning Strike Damage in CFRP Composites Using Thermography and X-ray Computed Tomography</i> , Sreedhar Unnikrishnakurup, Vinod Kumar, Jonathan Zheng, Santhakumar Sampath, Zi Wen Tham, Zhang Lei, Siok Wei, Warintorn Thitsartarn, Andrew Ngo |
| 14:20-14:40 | ID852 , <i>Sim-MDL: Multimodal Deep Learning for TBC Evaluation using Infrared and Terahertz Imaging NDE</i> , Sruthi Krishna Kunji Purayil, Krishnan Balasubramaniam |
| 14:40-15:00 | ID874 , <i>AI-driven Prediction of Structural Steel Mechanical Properties using Ultrasound and Eddy Current Testing</i> , Zaki Bin Muhammad Sham, Shagea Alqawzai, Haris Sufyan Bin Mohamad, Thi Qui Nguyen, Mingshan Zhao, Zhang Linyun |
| 15:00-15:20 | ID876 , <i>AI-Driven Prediction of Structural Steel Mechanical Properties using Chemical Compositions and Hardness</i> , Zaki Bin Muhammad Sham, Shagea Alqawzai, Haris Sufyan Bin Mohamad, Thi Qui Nguyen, Mingshan Zhao, Zhang Linyun |

Coffee break

SS12 Active Thermography Techniques for NDT and Material Characterization

ROOM 12.A

| | |
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| 9:00-9:20 | ID230 , <i>Comparison of Lockin- and Pulse Phase Thermography for Foreign Object Detection in Prepreg Ply Assembly</i> , Manuel Ederer, Santhosh Ayalur-Karunakaran, Gerhard Traxler |
| 9:20-9:40 | ID245 , <i>Rapid Quantitative Assessment of Lightweight Metal Additive Structures Using Thermoelastic Stress Analysis</i> , Joshua Rodrigues, Matthew Pelosi, Wayne Foster, Simon Barter, Raj Das |
| 9:40-10:00 | ID304 , <i>Non-destructive Evaluation of Microcracks in WC-10Co-4Cr (HVOF) Coatings Using Eddy Current Testing and Induction Thermography</i> , Niklas Steinbrecher, Hans Jürgen Maier, Sebastian Barton |
| 10:00-10:20 | ID467 , <i>Active Thermography with Pulse Compression for Thermally Fast Materials</i> , Julien Lecompanion, Rocco Zito, Stefano Laureti, Mathias Ziegler, Marco Ricci |
| 10:20-10:40 | ID329 , <i>Coupling Eddy Current and Thermal Diffusion Simulation to Model Induction Infrared Thermography in CIVA</i> , Marc Bakry, Rutger A. Biezemans, Edouard Demaldent |
| Coffee break | |
| 11:00-11:20 | ID395 , <i>FK-VWT: Frequency Kernel Based Virtual Wave Thermography for Composite Panels</i> , Xiangyu Wang, Mathias Kersemans, Anastasiia O. Krushynska, Ihsan E. Bal, Qiuji Yi, Liangliang Cheng |
| 11:20-11:40 | ID662 , <i>Crack Characterization in Ferromagnetic Steel Using Inductive Thermography</i> , Ester D'Accardi, Giuseppe Dell'Avvocato, Davide Palumbo, Umberto Galietti, Beate Oswald-Tranta |
| 11:40-12:00 | ID686 , <i>Exploiting Mismatched Filter for Barker Code Pulse Compression Thermography</i> , Rocco Zito, Julien Lecompanion, Stefano Laureti, Mathias Ziegler, Marco Ricci |
| 12:00-12:20 | ID626 , <i>Towards Non-destructive Prediction of Porosity-induced Mechanical Property Variations in L-PBF AlSi10Mg via Pulsed Laser Thermography</i> , Giuseppe Dell'Avvocato, Veronica Pocetta, Paolo Bison, Stefano Rossi, Umberto Galietti, Giovanni Ferrarini |
| 12:20-12:40 | ID702 , <i>Defect Segmentation Using Deep Learning to Reduce the Complexity of Pulsed Thermography Data</i> , Julian Grimm, Gerald Zauner, Günther Mayr, Gernot Mayr |

SS12 Active Thermography Techniques for NDT and Material Characterization

ROOM 12.A

Lunch

- 14:00-14:20 **ID837**, *Defects Characterization by Using a Deep Learning Approach on Thermal Data*, Tiziana Matarrese, Luis Antonio Felipe Sesé, Ángel Jesus Molina Viedma, Elías López-Alba, Francisco Alberto Díaz Garrido, Umberto Galietti, Davide Palumbo
- 14:20-14:40 **ID249**, *Active Infrared Thermography for the inspection of thermoplastic composite welds*, Daniella B. Deutz, H. Patrick Jansen
- 14:40-15:00 **ID836**, *Active Thermography for Quality Control and Defects Detection in PEKK TPMS Lattice Structures*, Fabio Distefano, Gabriella Epasto, Fabrizio Freni, Roberto Montanini, Mario Valenti
- 15:00-15:20 **ID832**, *Online Evaluation of Ultrasonically Welded Carbon Fiber Reinforced Thermoplastic Laminates by Means of Infrared Vibrothermography*, Mattia Tornabene, Massimiliano Russello, Giuseppe Pitarresi

Coffee break

A.3 Industrial Technologies and Processes

ROOM 12.B

| | |
|---------------------|--|
| 9:00-9:20 | ID224 , <i>Online Monitoring of Phase Transformation Evolution in Hot Rolled Steels during Controlled Cooling</i> , Haibing Yang, Frenk van den Berg, Jos Mosk, Simon Kerley, Mark Dolby, Joe West, Anthony Peyton, Claire Davis |
| 9:20-9:40 | ID112 , <i>Work Safety and Ecological Improvements for Magnetic Particle and Penetrant Testing</i> , Kersten Alward |
| 9:40-10:00 | ID120 , <i>Penetrant Testing = Advantages of using BIODEGRADABLE Penetrants (Health, Safety, Environment)</i> , Fabien Cormier |
| 10:00-10:20 | ID128 , <i>Online Testing of ERW-Welded Tubes with PAUT</i> , Wolfram Deutsch, Igor Martini, Massimo Cadeddu, Vasyly Tomnyuk, Timur Sayfullaev, Marius Weiler |
| 10:20-10:40 | ID157 , <i>NDE4.X - Next Level of NDT Automation in Aerospace</i> , Thomas Gramberger |
| Coffee break | |
| 11:00-11:20 | ID565 , <i>Advanced Phased-Array Methods for the Automated SAW Inspection with Wheel Probes</i> , Christof Breidenbach, Prashanth Kumar Chinta, Stephan Falter, Jörg Ininger, Christian Sturm, Thomas Würschig |
| 11:20-11:40 | ID184 , <i>Quantum Physics: New Light in Nondestructive Testing</i> , Giuseppe Nardoni, Marco Feroldi, Pietro Nardoni |
| 11:40-12:00 | ID205 , <i>Portable, Battery-Powered X-Ray System with a Compact Wired X-Ray Tube and Small Focal Spot</i> , Sebastian Eckel, Markus Schmid, Berthold Schreieck, Vladimir Alekseychuk, Alexander Alekseychuk |
| 12:00-12:20 | ID213 , <i>Surface Inspection of CFRP Composites Using High-Frequency Air-Coupled Ultrasonic Testing</i> , Héctor Calas, Tomas Gómez Álvarez-Arenas, Thomas Partiot, Hervé Saulais |
| 12:20-12:40 | ID225 , <i>Improved Process Control of High-strength Steels by Microstructure Monitoring with an Inline XRD Gauge</i> , Frenk Van den Berg, Ramon Speets, Cor Jan Boeder, Cornelia Ionescu, Martin Huisert, Suzan Bruinsma, S. Melzer, Horst Krauthäuser, Tobias Terlau |
| Lunch | |
| 14:00-14:20 | ID378 , <i>Development of an Eddy-current Probe for Quality Control of Conductive 3D Printing by FEM Modelling</i> , Till Schulze, Maren Rake, Martin Schulze, Nataliia Gromberg, Henning Heuer, Welf-Guntram Drossel |

A.3 Industrial Technologies and Processes

ROOM 12.B

- 14:20-14:40 **ID258**, *Ultrasonic Inspection of Complex Surfaces Using Novel Coupling Materials*, Julián Fernández-Avilés Gómez, Pablo Resa, Amador Sillero, Luis Elvira, Carmen Durán, Alexandre Delannoy, Èric Torra
- 14:40-15:00 **ID262**, *Signal Processing using Synthetic Aperture Focusing Technique for Ultrasonic Testing of Round Bars*, Kazuki Terada, Yutaka Matsui
- 15:00-15:20 **ID337**, *Development of NDT technology by means THz radiation and penetrants in aerospace*, Mykhailo Leonidovych Kazakevych, Oleksiy Denyshchenko, Volodymyr Kazakevych
- 15:20-15:40 **ID492**, *Ultrasonic NDE for Real-Time Monitoring of Vulcanization in Nitrile Butadiene Rubber*, Debasis Datta, Subhasis Mondal

Coffee break

M.5 Ultrasonics

ROOM 12.C

- 9:00-9:20 **ID597**, *Austenitic Welds Phased Array Ultrasonic Inspection Modeling and MAPoD Study*, Bastien Clause, Adam Pacalis, Fabrice Foucher, Adam Wick, Paul Boulware, Eric Dittman, Mark Lozev
- 9:20-9:40 **ID393**, *Sparse 3D imaging*, Pierre Kauffmann, Khuram Faraz, Jean-Baptiste Jacquet, Jean-Luc Guey, Mohamed Tamraoui, Barbara Nicolas, Hervé Liebgott, Etienne Coffy
- 9:40-10:00 **ID401**, *Distinguishing Defects from Corrosion in Ultrasound Images*, Yongxing Cai, Anthony Mulholland, Jie Zhang
- 10:00-10:20 **ID428**, *Ultrasonic Assessment of Damage Evolution and Self-healing in High-performance PVA Fiber-reinforced Concrete*, Yasmin W. Tamimi, Vanessa G. Cappelleso, Gerlinde Lefever, Nele De Belie, Dimitrios G. Aggelis
- 10:20-10:40 **ID435**, *A Novel Method to Measure Wall Thickness Under an Obstruction by Conventional Ultrasonic Thickness and Flaw Gauges*, Matthew Davison
- Coffee break**
- 11:00-11:20 **ID465**, *Feasibility Study of Applying an Advanced Phased-Array Ultrasonic Technique to Weld Inspection in Thin Stainless-Steel Sheets*, Tarik Iazourene, Etienne Laroche, Jimmy Ponton
- 11:20-11:40 **ID534**, *Comparison of TFM Inspection Techniques with FMC and PWI Firing for Stainless Steel and Dissimilar Metal Welds*, Paul Hillman, Jérôme Poirier, Guy Maes
- 11:40-12:00 **ID541**, *Democratising Advanced UT: A Workflow Centric Approach for NDT 4.0*, Paul Hillman, Dominic Giguere, Jerome Poirier
- 12:00-12:20 **ID558**, *Characterisation of Critical Microstructures in Metals Using Shear Ultrasound*, André Lello de Almeida, Michael J. S. Lowe, Bo Lan
- 12:20-12:40 **ID559**, *Robot-based Immersion Ultrasonic Testing using adapted TFM/FMC*, Thomas Heckel, Tobias Homann, Christian Hassenstein, Friedrich Bake
- Lunch**
- 14:00-14:20 **ID147**, *Ultrasonic Inspection on Metal and Composite Material – Application and Differences*, Valter Capitani, Nicola Centra, Giacomo Maione
- 14:20-14:40 **ID568**, *Deployment of AI-Assisted Ultrasonic Inspections in the Nuclear Power Industry*, Thiago Osorio
- 14:40-15:00 **ID572**, *Fully Non-Contact ACUT-Based Crack Depth Evaluation Using Crack-Guided Leaky Rayleigh Modes*, Hyeonwoo Nam, Chan Wook Park, Wonjae Choi
- 15:00-15:20 **ID159**, *Matrix Technology Applications for Advanced Ultrasonic Testing*, Stephan Falter, Thomas Würschig

Coffee break

SS17 Drone for NDT Industrial Applications

ROOM GS A

- 9:00-9:20 **ID358**, *Transition from Internal Visual Testing (VT) to External Robotized Phased Array Ultrasonic Testing (PAUT) for Periodic Pressure Vessel Examinations in Switzerland*, Carlo Romito, Stefano Cipolla, Francesco Centenaro
- 9:20-9:40 **ID448**, *Target 3D for Visual Testing with Drones*, Emanuele Artenio, Giuseppe Augugliaro, Riccardo Balistreri, Davide Gattamelata, Francesco Giacobbe, Omero Spanu
- 9:40-10:00 **ID508**, *Opportunities and Criticalities in Infrared Inspection of Photovoltaic Modules by UAVs*, Hamza Nasri, Jamel Riahi, Silvano Vergura
- 10:00-10:20 **ID569**, *Technological Challenges in Drone Based NDT Contact Inspections*, Simone Panza
- 10:20-10:40 **ID674**, *Drone-Based Multi-Modal Inspection of Wind Turbine Rotor Blades*, Ramanan Sridaran-Venkat, Michael Stamm
- 10:40-11:00 **ID862**, *Enhanced Aircraft Visual Inspection: Improving Defect Detection with Deflectometry, AI Assistance, and Synthetic Data Augmentation*, Raphaël Viards, Henri Marticou, Jérémy Pirard

Coffee break

SS18 Drone and NDT for cultural heritage and civil infrastructures

ROOM GS A

- 11:20-11:40 **ID127**, *Drone-Based Contact NDT for Concrete Structures*, Claudia Thurnherr, Benoît Jordan, Daniel Algernon
- 11:40-12:00 **ID848**, *Multi-Hyperspectral Imagery for Semi-Automatic Decay Identification: the Case Study of the Cavour Canal Historic Water-Bridge*, Alessandra Spadaro, Francesca Matrone, Ramin Rashidi Alavijeh, Andrea Maria Lingua
- 12:00-12:20 **ID886**, *Numerical Integration of Geomatic Surveying and Infrared Thermography for Non-Destructive Documentation of Historic Masonry*, Anna Forte, Francesca Trevisiol, Giulia Fiorini, Gabriele Bitelli
- 12:20-12:40 **ID920**, *Enhancing Aerial Non-destructive Tests with Controlled Sliding for Concrete Inspection*, Simone D'Angelo, Vincenzo Lippiello

Lunch

SS19 Barkhausen Noise Testing method

ROOM GS A

- | | |
|-------------|--|
| 14:00-14:20 | ID217 , <i>The Study of Time-Dependent Effects of Barkhausen Noise Reference Samples</i> , Suvi Santa-aho, Aki Sorsa, Jari Olavison, Minnamari Vippola |
| 14:20-14:40 | ID494 , <i>Non-Destructive Characterization using Barkhausen Noise to Measure Residual Stresses of Induction Hardened Steel Components</i> , Jonas Holmberg, Per Lundin, Johan Wendel |
| 14:40-15:00 | ID605 , <i>A Feasibility Study on MBN-Based Stress Evaluation of Cable-Based Bridges</i> , Kwang-Yeun Park, Joo-Hyung Lee, Changbin Joh, Ji-Young Choi, Imjong Kwahk |
| 15:00-15:20 | ID694 , <i>Influence of Magnetizing Core Materials and Size on the Detection Sensitivity of Grinding Burns using Magnetic Barkhausen Noise</i> , Mikel Cuenca-Ariza, Ane Martinez-de-Guereñu, Kizkitza Gurruchaga |
| 15:20-15:40 | ID809 , <i>Magnetic Rotational Permeability (MRP) for Mechanical Stress Estimation</i> , Yves Tene Deffo, Tetsuya Uchimoto, Benjamin Ducharne |
| 15:40-16:00 | ID813 , <i>Non-Destructive Determination of Surface Residual Stresses in Electron Beam Welded AISI 410 Plates using Magnetic Barkhausen Noise Technique</i> , Hasan İlker Yelbay, Cemil Hakan Gür |

Coffee break

THURSDAY 18 JUNE

10:00-11:30
Coffee Break

12:30-14:00
Lunch

15:30-16:30
Coffee Break

17:00-18:00
Networking Happy Hour

SS21 Aerospace

ROOM 11.A1

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|---------------------|---|
| 9:00-9:20 | ID769 , <i>EN4179:2026 / NAS410 rev.6 Background and Scenario of the New Standard for Aerospace NDT Personnel Qualification and Approval</i> , Fabrizio Montagnoli |
| 9:20-9:40 | ID870 , <i>Aerospace Immersion UT Inspections with Adaptive TFM</i> , Jeremy Gaumer, Gavin Dao |
| 9:40-10:00 | ID953 , <i>Development of Radial NDT Inspection for Electron Beam Runout Welding in Helicopter Components</i> , Francisco Carrasco, Arnaud Desmis |
| 10:00-10:20 | ID784 , <i>Automated Analysis of Ultrasonic Data for Complex CFRP Aerostructures Using Adaptive Segmentation</i> , Julien Walter, Alexandre Beausoleil, Elhadji Barra Ndiaye, Loïc Séguin-Charbonneau |
| 10:20-10:40 | ID327 , <i>Computed Tomographic Inspection in the Aerospace Industry: Guidelines for Standardize the Inspection Process and Image Quality Parameters Study According to Italian Experience</i> , Francesco Mascolo, Liberata Furente, Sara Guelfo, Stefano Benuzzi |
| Coffee break | |
| 11:00-11:20 | ID575 , <i>Eddy Current In-Situ Monitoring for Process and Quality Assessment of Additive Manufacturing (AM) Laser Powder Bed Fusion (L-PBF)</i> , Arber Caslli, Andrea Gianneo |
| 11:20-11:40 | ID576 , <i>Film Replacement in Radiographic Testing: Case Studies from Aerospace Applications</i> , Andrea Gianneo |
| 11:40-12:00 | ID268 , <i>Raw Material Ultrasonic Inspection for Aerospace: Inspection of the "Dead Zone" Using Shear Waves</i> , Dimitri Olivero, Dario Seni, Lucas Ascenzi |
| 12:00-12:20 | ID649 , <i>Transferring Qualification acc. to EN 4179 / NAS 410 Qualification Standards</i> , Tomas Zavadil |
| 12:20-12:40 | ID652 , <i>Implementing Annual Proficiency Review acc. to EN 4179 / NAS 410 Qualification Standards</i> , Tomas Zavadil |
| Lunch | |
| 14:00-14:20 | ID554 , <i>A Comprehensive Framework for Pyroshock Testing of Aerospace Equipment</i> , Luca Viale, Alessandro Paolo Daga, Alessandro Fasana, Luigi Garibaldi |
| 14:20-14:40 | ID829 , <i>Fused Ultrasonic Tomography Imaging Technique for Gas-Liquid Distribution in Spacecrafts' Tank Based on RAPID and TFM</i> , Kunyou Jiang, Chengguang Fan, Xiaozhen Zhang, Zongyu Wu, Yong Zhao |

SS21 Aerospace

ROOM 11.A1

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|-------------|---|
| 14:40-15:00 | ID121 , <i>Detection of Fatigue Cracks in Multilayer Riveted Aircraft Structures by Double Differential Eddy Current Probes</i> , Valentyn Uchanin, Giuseppe Nardoni, Mario Turconi, Marco Feroldi |
| 15:00-15:20 | ID490 , <i>Inspections After Blending-out Scratches on Aircraft Fuselage Made of Aluminium Alloy</i> , Guillaume Ithurralde, Patrick Metayer, Mohamed Sayeh |
| | Coffee break |
| 15:40-16:00 | ID376 , <i>High-Resolution Immersion Ultrasonic Testing of Critical Aerospace Parts in MRO Operations</i> , Iris Buchmeier-Hevroni |
| 16:00-16:20 | ID385 , <i>Practical Implementation of Phased Array Ultrasonic Testing (PAUT) in Automated Disc Inspection Systems</i> , Michael Bron, Elena Miltreyger |
| 16:20-16:40 | ID907 , <i>Ensuring NDT Safety in Cryogenic Propulsion: An Analysis of Modern Oxygen Compatibility Standards and Procurement Challenges for Liquid Penetrant Materials</i> , Domenico Telesca, Liberata Furente, Alessio Franchina |
| 16:40-17:00 | ID564 , <i>Influence of the Surface Finish of a Metal Bar Related to the Ultrasonic Surface Resolution and the Measurement of its Roughness</i> , Enzo Di Liddo, Francesco Piazza |

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| 9:00-9:20 | ID269 , <i>Trends in the Digitalisation of NDT</i> , Martin Wall, Zubeir Ebrahim Saib |
| 9:20-9:40 | ID896 , <i>Deployment Relevant Uncertainty Quantification for NDE 4.0 Applications</i> , Zi Li, Lei Peng, Yiming Deng |
| 9:40-10:00 | ID701 , <i>The NDE Value Alliance: Architecting the Trust and Interoperability Framework to Accelerate NDE 4.0 through Collaborative Standardization</i> , Johannes Vrana, Ripi Singh, Tjibbe Bouma, Niels Westendorp, Holger Haßdenteufel, Bernd Valeske |
| 10:00-10:20 | ID191 , <i>The OpenNDE Data Format</i> , Vincent Bergeaud, Steve Holland, Terrill Massey, Andreas Schumm, Paul Wilcox |
| 10:20-10:40 | ID464 , <i>ONDE (Open Non Destructive Examination) File Format – Technical Choices</i> , Vincent Bergeaud, Sylvain Chatillon, Steve Holland, Terrill Massey, Quentin Mistral, Andreas Schumm, Paul Wilcox |
| Coffee break | |
| 11:00-11:20 | ID291 , <i>Digital Integration of a Robotic NDT System Through a Real-Time Data Pipeline</i> , Faris Nafiah, Mael Sautin, Andrew Kelly |
| 11:20-11:40 | ID579 , <i>Implementation of DICONDE for the Storage of Ultrasonic Waveform Data: A Core Enabler for NDE 4.0</i> , Johannes Vrana, Daniel Schaefers, Jacob Rühle, Wolfram Deutsch |
| 11:40-12:00 | ID704 , <i>The Evolution of NDT Documentation: Establishing a Machine-Readable Language for NDE 4.0 through the DX-Schema Project</i> , Johannes Vrana, Frank Leinenbach, Thomas Engel, Sascha Eichstädt, Michael Melzer |
| 12:00-12:20 | ID945 , <i>The Positive Effect on Compliance, Security, and Efficiency by the use of State-Of-The-Art NDT Management Software</i> , Achim Hansen, Andreas Thielen |
| 12:20-12:40 | ID600 , <i>Assessing the Accuracy and Precision of XR Tracking for NDT Inspection</i> , Daniel Conniffe, Adam Fletcher, Anthony Peyton, Alex Salem, Jim Skelton |
| Lunch | |
| 14:00-14:20 | ID844 , <i>Ultrasound Software based Tomography for Porosity and Defect Characterization in Complex Composite Structures</i> , Piotr Karwat, Marcin Lewandowski, Krzysztof Dragan |
| 14:20-14:40 | ID661 , <i>NDE 4.0 and Artificial Intelligence: Partnership and Evolution of AI Applications</i> , Rafael Martinez-Oña |

SS13 NDE 4.0

ROOM 11.A2

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|-------------|--|
| 14:40-15:00 | ID622 , <i>Deep Learning Based Automatic Analysis of Multimodal TFM data in Elbow-Tube Weld Junctions in Nuclear</i> , Roberto Miorelli, David Roue, Sébastien Robert |
| 15:00-15:20 | ID424 , <i>Advancements in Nondestructive Testing and Monitoring Process</i> , Christian Conrad, Yasmine Gabi, Thorsten Mueller |
| | Coffee break |
| 15:40-16:00 | ID624 , <i>Simple Approach for Testing Distance Detection during 3MA-II lift-off Measurements on Moving Components Based on PCA and SVM</i> , David Böttger, Yasmine Gabi |
| 16:00-16:20 | ID517 , <i>DX-Schema – Standardized Modular Document System for a “digital-first” Quality Infrastructure</i> , Frank Leinenbach, Johannes Vrana, Thomas Engel, Sascha Eichstädt, Michael Melzer |
| 16:20-17:00 | Panel Discussion |

SS8 Non-destructive testing and evaluation of composite materials

ROOM 11.B1

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| 9:00-9:20 | ID192 , <i>Comparison of Terahertz and Infrared Thermography Methods for Detecting Defects in Aramid Fiber Reinforced Composites</i> , Waldemar Swiderski, Tomasz Krzeminski |
| 9:20-9:40 | ID218 , <i>Measuring Cracks and Corrosion in Aluminium Backup Structure through Composite and Low Observable Coating</i> , H. Patrick Jansen, Arnoud F. Bosch, D. Jacco Platenkamp |
| 9:40-10:00 | ID226 , <i>Automated NDT Solutions for Complex Aerospace Components: Advancing Flight Safety and Inspection Efficiency</i> , René Sicard, Ahmad Chahbaz |
| 10:00-10:20 | ID234 , <i>Characterization of Porosity and Pore Geometry Using Acoustic Resonance Analysis</i> , Linus Littner, Igor Solodov, Marc Kreuzbruck |
| 10:20-10:40 | ID279 , <i>Adaptive Fusion Imaging for Delamination Defects in GFRP Composites Based on Terahertz Time-Domain Spectroscopy</i> , Zenghua Liu, Rui Li, Yanping Zhu, Xiaoran Wang, Xin Zhao |
| Coffee break | |
| 11:00-11:20 | ID280 , <i>Guided Wavefield Damage Imaging Method via Two-Dimensional Multi-Frequency Sparse Wavenumber Spectrum Reconstruction</i> , Zenghua Liu, Xiaoyu Liu, Yanping Zhu |
| 11:20-11:40 | ID316 , <i>Simultaneous Thickness Measurement of Multiple Bondlines using Transmission Measurements</i> , Arno Volker, Patrick Jansen |
| 11:40-12:00 | ID390 , <i>Experimental and Numerical Investigation of Orientation Dependent Eddy Current behavior in CFRP Laminates</i> , Atul Sharma, Robert Hughes |
| 12:00-12:20 | ID399 , <i>Advancements in Direct Velocity Mapping Applied to Composite Panels</i> , Jan-Willem Vrolijk, Emiel Hassefras, Marco Mout, Maurits van der Heiden, Egon Merks-Swolfs, Quincy Martina |
| 12:20-12:40 | ID422 , <i>Acoustic Emission and Distributed Backface Strain Monitoring of Crack Growth in Composite Adhesively Bonded Joints Under Mode II Fatigue Loading</i> , Alessandra Panerai, Benedetta Oneda, Luca Michele Martulli, Andrea Bernasconi, Michele Carboni |
| Lunch | |
| 14:00-14:20 | ID463 , <i>Defect Reconstruction via Total Focusing Method and Phase Coherence Imaging for Materials Exhibiting Elliptical Anisotropy</i> , Martin Spies, Prashanth Chinta, Stephan Falter |

SS8 Non-destructive testing and evaluation of composite materials

ROOM 11.B1

- 14:20-14:40 **ID535**, *Development of Lamb Wave and CNN-Integrated Damage Identifier for GFRP Composites*, Yonghee Lee, Yong Suk Oh, Juyeop Park, Donghoon Kang
- 14:40-15:00 **ID586**, *Feasibility of a Scalable All-Optical Network Architecture for Non-Destructive Testing of Composites*, Benoit Quesson, Alvaro Gonzalez Jimenez, Lorenzo Scherino, Marie Zandi, Daniele Piras, Wim de Jong, Lun Cheng, Rob Jansen, Paul van Neer
- 15:00-15:20 **ID588**, *Applicability of Air-Coupled Rayleigh Waves for Inspection of As-Printed BAAM Components*, Ander Dominguez-Macaya, Nekane Galarza, Jon Olaizola, Jose Manuel Abete
- 15:20-15:40 **ID629**, *Improved Sensitivity Fiber Optic Readout System Based on Pi-Shifted Fibre Bragg Gratings and Mode Locked Lasers for Composite Structures Inspection*, Alvaro Gonzalez Jimenez, Benoit Quesson, Lorenzo Scherino, Marie Zandi, Daniele Piras, Wim de Jong, Lun Cheng, Rob Jansen, Paul van Neer
- Coffee break**
- 16:00-16:20 **ID685**, *Automated Damage Detection in Carbon-Fiber Reinforced Polymers using Air-Coupled Ultrasound and Neural Networks*, Olga Popovych, Kher Wei Lai, Ana Menendez Orellana, Christian U. Grosse
- 16:20-16:40 **ID739**, *Non-Destructive Tests on DLP-Based 3D-Printed h-BN/Graphite Polymer Composites*, Marco Fortunato, Angelo Tati, Daniele Mirabile Gattia
- 16:40-17:00 **ID783**, *Ultrasonic Probe Mimicking Technique and its Application to Porosity Measurement in Composite Materials*, Julien Walter, Alexandre Beausoleil, Olivier Arès
- 17:00-17:20 **ID933**, *Shearography for Non-Destructive Inspection of Composite Repairs under Passive Fire Protection*, Mauro Eduardo Benedet, Daniel Pedro Willemann, Analucia Vieira Fantin, Armando Albertazzi Jr., Bruno Schutz, Leandro Bezerra, Marcelo Raulino

AM.2 Automation and Robotics

ROOM 11.B2

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| 9:00-9:20 | ID775 , <i>Performance Evaluation of Ultrasonic Sparse Array Networks – Implications for Robotic Inspection of Large Areas</i> , Bruce W. Drinkwater, Anthony J. Croxford, Xudong Niu, Michael Todd |
| 9:20-9:40 | ID645 , <i>A Hybrid Phased Array Ultrasonic Testing Methodology for A1106 High Manganese Steel using DMA Longitudinal and Creep Wave Techniques</i> , Sajeesh Kumar Babu, Thiruvenkadam Sugumaran |
| 9:40-10:00 | ID142 , <i>Automated NDT Inspection for Spot Welds in Collaborative Mode and with AI Driven Software</i> , Christian Wagner, L. Baumgart, S. Klink |
| 10:00-10:20 | ID161 , <i>Development of NDT Methods and Three-Dimensional Diagnostic Techniques with a Robotic Automation</i> , Paola Carlorosi |
| 10:20-10:40 | ID204 , <i>PAUT Testing System for Large, Seamlessly Rolled Rings</i> , Wolfram Deutsch, Jürgen Närmann, Jörn Boltten, Timur Sayfullaev, Marius Weiler |
| Coffee break | |
| 11:00-11:20 | ID475 , <i>Remote-Support Technology for Data Interpretation and Services in Automated UT: The Autosonic™ Use Case</i> , Erik Stara, Luca Scaccabarozzi, Oliver von Trzebiatowski, Marco Induti |
| 11:20-11:40 | ID348 , <i>Challenges for Automated Ultrasonic Testing of Forged Parts with Immersion Technique</i> , Thomas Rehfeldt, Alexander Köck, Andreas Weber, Sandra Motschieder, Jeanne Bargsten |
| 11:40-12:00 | ID377 , <i>Implementation of a Semi-Automated Phased-Array Mapping Solution for Flow Accelerated Corrosion Monitoring</i> , Eliot Chaize, Grégoire Benoist, Valentin Perret, Guillaume Neau |
| 12:00-12:20 | ID394 , <i>Adaptive Laser-Induced Phased Arrays for Volumetric Imaging of Defects in 3D Curved Surfaces</i> , Rafael Fuentes-Dominguez, Martin Todd, Richard J. Smith, Matt Clark |
| 12:20-12:40 | ID460 , <i>Climbing Robots: A New Era for NDT on Tall Structures</i> , Jack Cornes, Jean-Marie Henault |
| Lunch | |
| 14:00-14:20 | ID200 , <i>Inline Ultrasonics Measurements of Pipes and Tubes: From an Inspection Machine to a Quality Tool</i> , Helmut Breidenbach, Stephan Falter, Renjith Cheruthazhathu Ravindran Nair, Thomas Würschig |
| 14:20-14:40 | ID613 , <i>Advanced Automated PAUT Systems Utilizing Special Immersion Testing Techniques</i> , Radek Salač |

AM.2 Automation and Robotics

ROOM 11.B2

- 14:40-15:00 **ID614**, *Advanced Automated Ultrasonic Systems Utilizing Modern Technologies*, Radek Salač
- 15:00-15:20 **ID636**, *Robust Virtual Encoder: using Ultrasound Data for Compensation of Depth Variations in Camera-Based Odometry*, Matheus F. Dário, Fernando H. R. Caetano, Daniel Santin, Henrique M. Guerra, Huriel A. Dos Santos, Thiago E. Kalid, Tatiana de A. Prado, Gustavo P. Pires, Thiago A. R. Passarin
- Coffee break**
- 15:40-16:00 **ID499**, *Developing an Adaptive Testbed for Robotic Inspection*, Liam Murray, Tyler Lesthaeghe, Matthew Cherry, Andrew Gillman, Sean Donegan, LoriAnne Groo
- 16:00-16:20 **ID764**, *Advances in Ultrasonic Corrosion Mapping Through Integrated Acquisition Architectures*, Federico Zottig, Cyril Thibault
- 16:20-16:40 **ID861**, *Development and Validation of an Eddy Current Instrumented Pipeline PIG for Fatigue Crack Detection in Girth Welds of Clad Pipes*, Lucas B. Campos, Rafael W. F. dos Santos, Lucas M. C. da Silva, Diogo B. C. Lima, Miguel A. Freitas, Cesar G. Camerini, Gabriela R. Pereira
- 16:40-17:00 **ID930**, *Multi-Robot Computed Tomography Platform for Adaptive Non-Destructive Evaluation*, Josef Uher, Jana Zálišová, Jakub Veselý, Michal Pech, Filip Dominec

HF.1 Qualification, Certification, Standards and Training

ROOM 11.C1

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| 9:00-9:20 | ID115 , <i>Improving Inspector Training by Incorporating Artificial Defect Data in Guided Wave Testing</i> , Diana Olivia Martinez-Trejo, Brian Pavlakovic, Keith Vine |
| 9:20-9:40 | ID545 , <i>EddyWeb – One for All!</i> , Gerhard Mook, Yury Simonin |
| 9:40-10:00 | ID445 , <i>Traceability and Operator Assistance System for Manual UT Non-Destructive Testing</i> , Florence Grassin, Michel Cardoso, Vincent Saint-Martin, Vincent Bergeaud, Julien Banchet, Cécile Mayau |
| 10:00-10:20 | ID468 , <i>Qualification and Certification of NDT Personnel in Civil Engineering (NDT-CE)</i> , Sascha Feistkorn |
| 10:20-10:40 | ID439 , <i>French Certification of NDT Operators for the Detection of Reinforcement in Concrete Structures</i> , Alexandre Boule, Bernard Quénee, Jean-Paul Balayssac, Nathalie Cordier, Sophie Gwinner, Christopher Ostrowski, Xavier Dérobert, Bernard Vincent, Lucas Bourreau, Jules Le Bec, Mehdi Sbartai, Sandra El Tahir, Stéphane Geneau |
| Coffee break | |
| 11:00-11:20 | ID260 , <i>Characterization of Flexible Digital Detector Arrays using ASTM E2597/E2597M-22</i> , Katie Carpenter |
| 11:20-11:40 | ID720 , <i>Strengthening Global Capacities in Non-Destructive Testing for Industry, Cultural Heritage, Civil Engineering and Disaster Recovery: Recent Programmatic Developments at the IAEA</i> , Hannah Asamoah Affum, Gerardo Maghella Seminario, Shangyuan Liu |
| 11:40-12:00 | ID651 , <i>Strengthening NDT in Civil Engineering through Training and Harmonized Qualification Frameworks: Experience from an IAEA–RCA Initiative</i> , Ilham Mukriz Zainal Abidin, Gerardo Maghella Seminario, K. Phaokhamkeo |
| 12:00-12:20 | ID947 , <i>Artificial Intelligence as a Communicative Partner in Technical Communication: A Systemic Approach to Information Management and Documentation in NDT</i> , Emma Selene Ixchel Iturriaga Saucó, Marina Pomo |
| 12:20-12:40 | ID136 , <i>Cloud Platform for Ultrasonic Instruments Calibration and Certification</i> , Abdelmaboud Elbasyouny, Stephan Falter, Johannes Büchler, Alexander Fritsch |
| Lunch | |
| 14:00-14:20 | ID293 , <i>Image Quality Indicator for XCT Systems</i> , Anne-Francoise Obaton, Dominik Brouczek, Martin Schwentenwein, Denise Mödder, György Attila Harakály, Marcus Oel, Jens Luebbehusen, Uwe Ewert |

HF.1 Qualification, Certification, Standards and Training

ROOM 11.C1

- 14:20-14:40 **ID653**, *AI Qualification and Implementation in RPVHI in Sweden*, Rickard Samuelsson Jerndahl, Iikka Virkkunen, Gustav Holmer
- 14:40-15:00 **ID705**, *Digital Training: How can Simulators Enhance Trainees' Learning?*, Rafael Iglesia, Benoit Puel, Fabrice Foucher
- 15:00-15:20 **ID679**, *Human Factor and Communication Processes in Technical Training: A Systemic Approach to Adult Learning in Non-Destructive Testing*, Marina Pomo, Emma Selene Ixchel Iturriaga Saucó
- Coffee break**
- 15:40-16:00 **ID210**, *Evaluation of Magnetic Field Impact on Workers during Magnetic Particle Inspection*, Eleonora Fontò, Michele La Bianca, Luca Giaccone, Fabio Freschi, Aldo Canova
- 16:00-16:20 **ID957**, *Safety Management System (SMS) Applied to the NDT*, Giuseppe Di Sorbo, Valter Capitani, Daniele Petrucci
- 16:20-16:40 **ID402**, *New Standards and Requirements for Quality Assurance in Industrial Computed Tomography*, Uwe Ewert, Holger Roth, Anne-Francoise Obaton, Alain Kueng, Josephine Gutekunst, Ulrich Neuschaefer-Rube, Thomas Blumensath, Fritz Hoerauf, Marko Katic

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| 9:00-9:20 | ID941 , <i>Construction of a Phased Array Ultrasonic Testing (PAUT) Performance Demonstration (PD) System for Petrochemical Plant Facilities in Korea</i> , Sungjong Cho, Hyunjun Kim, Ik Keun Park, Young Min Kim, Byeong Jik Jeon, Minjoo Kim |
| 9:20-9:40 | ID384 , <i>European Reliability Framework: A Bridge between the Different Systems in NDT and the Key for NDT 4.0</i> , Daniel Kanzler |
| 9:40-10:00 | ID356 , <i>Investigating the Quality of Grouting for Tendon Ducts using Numerical UT-Simulations</i> , Fabian Dethof, Francesca Marsili, Sylvia Keßler |
| 10:00-10:20 | ID359 , <i>Nonlinear P-POD: Enhancing Probability of Detection in X-ray Thickness Inspections</i> , Kerstin Kirschbaum, Matthias Goldammer, Christian U. Grosse |
| 10:20-10:40 | ID379 , <i>Performance Comparison of Total Focusing and Phased Array under Practical Inspection Uncertainties</i> , Benoit Jordan, Carlo Romito, Daniel Algernon |
| Coffee break | |
| 11:00-11:20 | ID165 , <i>Deep Learning-Supported Automated Evaluation of Dye Penetrant Inspection Results in Compliance with EN 1371-1 and ASME Section VIII</i> , Peter Haupts, Sebastian Pose, Mohieddine Jelali |
| 11:20-11:40 | ID672 , <i>Human Factors in the Ultrasonic Testing of Railway Axles: Effects of Rare Signals and Automation Support</i> , Marija Bertovic, Momo Hegeler, Stefan Lichtnekert, Linda Onnasch |
| 11:40-12:00 | ID487 , <i>Tfm-Pci Combination: A New Frontier in Ultrasonic Imaging</i> , Salvatore Gabriele Torregrossa, Rosario Molica Nardo, Davide Campanella |
| 12:00-12:20 | ID717 , <i>Challenges of Remote Camera MPI/FPI Inspections</i> , Miroslav Šnirer, Patrik Backo, Radek Salač |
| 12:20-12:40 | ID630 , <i>Fatigue Damage Is Not a Crack: Why NDT Must Inform Decisions, Not Just Detection</i> , Francisco Garcia Torres |
| Lunch | |
| 14:00-14:20 | ID162 , <i>Fatigue Cracks: Criteria to Overcome the Detection Limit in the Early Stage</i> , Giuseppe Nardoni, Marco Feroldi, Fabio Savoldi, Diego Nardoni |
| 14:20-14:40 | ID602 , <i>Lift-off Trajectory Analysis for Eddy Current Detection of Millimetre-Scale Cracks in Curved Geometries</i> , Jingyuan Yang, Qiuping Ma, Guiyun Tian, Cesar Camerini, Qiuji Yi |

SS15 NDT Reliability

ROOM 11.C2

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| 14:40-15:00 | ID693 , <i>Microfocus Gantry CT – Innovative Computed Tomography for Use in Research and Industry</i> , Jens Luebbehusen, Adrian De Riz, Gábor Szabó |
| 15:00-15:20 | ID804 , <i>A Novel Method for Fatigue Crack Size Quantification in Spacecraft Structures under Variable Temperature Environment Based on Information Entropy</i> , Xiaozhen Zhang, Chengguang Fan, Kunyou Jiang, Zongyu Wu, Yong Zhao, Quan Chen, Wenlong Zhang |
| | Coffee break |
| 15:40-16:00 | ID810 , <i>Quantitative Monitoring Method for Hydrochloric Acid Corrosion Based on Lamb Waves</i> , Xiaozhen Zhang, Chengguang Fan, Kunyou Jiang, Zongyu Wu, Yong Zhao, Quan Chen, Wenlong Zhang |
| 16:00-16:20 | ID194 , <i>Methodologies for Verifying the Optimal Magnetic Field in the Fluorescent Magnetic Particle Method</i> , Massimo Capriolo, Riccardo Banin, Elisa Ferrari, Pierangelo Crippa |

A.1 Civil and Cultural Heritage

ROOM 11.D1

- 9:00-9:20 **ID107**, *Investigating the Suitability of Galena (Lead Glance) as a Construction Material for Radiographic Bunkers*, Tejas N. Ingale
- 9:20-9:40 **ID154**, *Multimodal NDT Assessment of Concrete Structural Elements before Re-use*, Ernst Niederleithinger, Jelena Bijeljic, David Ringeloth, Oleksandr Al Shboul, Iurie Curosu
- 9:40-10:00 **ID214**, *Autogenous Healing of Concrete Assessed through Rayleigh Waves*, Gerlinde Lefever, Didier Snoeck, Dimitrios G. Aggelis
- 10:00-10:20 **ID374**, *Data-Driven Geostatistical Mapping of Concrete Mechanical Properties from Ultrasonic Measurements*, Douha Lakhout, Narintsoa Ranaivomanana, Frédéric Taillade, Bertrand looss, Jean-Paul Balayssac
- 10:20-10:40 **ID698**, *ITZ Characterization on Thermally Damaged Glass Beads Concrete by Diffuse Ultrasound*, Manda Ramaniraka
- Coffee break**
- 11:00-11:20 **ID771**, *Evaluation of the Variation in NDT Results in Reinforcing Bars of Concrete Slabs, Subjected to Accelerated Corrosion Processes*, José P. Peña Caravaca, Carlos R. Arganis Juárez, Manuel Antuch, Pamela F. Nelson, Luis F. Desdín, Angeles Díaz Sánchez, Eduardo Robles Piedras
- 11:20-11:40 **ID917**, *Urban Utilities: NDT-CE on a Concrete Structure, after 28 Years with its Construction Halted*, Sebastian Laprida, Florencia Kihara
- 11:40-12:00 **ID231**, *Structural and Geotechnical Investigation Campaign using NDTs of the Camp Nou Stadium in Barcelona for the Remodelling project*, Abel Domato, Lluís Aranda, Aureli Ibars
- 12:00-12:20 **ID955**, *Beyond Rubble: The Indispensable Role of Non-Destructive Testing in Post-War and Post-Earthquake Recovery for Aleppo's Modern and Heritage Structures*, Tarek Krayem, Dario Foppoli
- 12:20-12:40 **ID587**, *Early-Stage Structural Behavior Assessment using Digital Image Correlation*, Giuseppe Pandarese, Simone Forlano, Maria Teresa Calcagni, Alessia Freddo, Francesco Monni, Enrico Quagliarini, Gian Marco Revel

Lunch

A.1 Civil and Cultural Heritage

ROOM 11.D1

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| 14:00-14:20 | ID426 , <i>Dynamic Monitoring of Monumental Artifacts</i> , Giorgio Sforza |
| 14:20-14:40 | ID114 , <i>Determining the Suitability of using X-Ray Fluorescence for Inspection of Archaeologically Excavated Soil Samples</i> , Tejas N. Ingale |
| 14:40-15:00 | ID849 , <i>Exploration of On-Site Archaeological Excavation Technology Based on Compton Scattering Tomography</i> , Yongshun Xiao, Chunbo Hu, Dini Lan, Xujian Ouyang, Wenzhong Xu, Peiyuan Ma, Minghao Dong, Junjun Li, Zhiyong Lu, Yongjian Zhang |
| 15:00-15:20 | ID893 , <i>Thermography in Building Analysis: Peculiar Examples and Field of Application</i> , Marco Maria Parrini, Anna Isabella Piazza |
| | Coffee break |
| 15:40-16:00 | ID659 , <i>Nano-Destructive Chromatographic Analyses of Cultural Heritage Royal Purple Dyeings</i> , Zvi Koren |
| 16:00-16:20 | ID331 , <i>Production of ^{26}Al and ^{10}Be via Neutron Reactions in SiO_2 Rocks: Implications for Burial Dating Related to the Cradle of Humankind-UNESCO World Heritage Sites</i> , Sara Rabaglia, Nicholas Pieretti, Cristian Massimi |

A.2 Energy and Environment

ROOM 11.D2

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| 9:00-9:20 | ID243 , <i>Some Insights on Conventional and Advanced Ultrasonic Testing of Large Forgings</i> , Michele Carboni, Fabio D'Urso, Massimo Guerrini, Lorenzo Parrotta, Giovanni Zappavigna |
| 9:20-9:40 | ID105 , <i>In-Situ Volumetric Inspection of Reciprocating Internal Combustion Engine (RICE) Piston Crowns as a Preemptive Detection Method for Cracking on Threaded Connection</i> , Terry Haigler, Jeff Henry, Gang Zhou |
| 9:40-10:00 | ID174 , <i>NDE Challenges and Solutions for the Inspection of CO₂ and Hydrogen Pipelines</i> , Joseph Krynicki, Lujian Peng, Gustavo Gonzalez, Hyun Jo Jun, Alain Chamberlain |
| 10:00-10:20 | ID202 , <i>Methodologies for Assessing Existing Penstocks</i> , Lorenzo Artaz, Antonino Sannolo, Maurizio Frola, Simone Ferrarese |
| 10:20-10:40 | ID203 , <i>Fatigue Behavior of Hydropower Shafts in the VHCF Regime</i> , Antonino Sannolo, Maurizio Frola, Simone Ferrarese |
| Coffee break | |
| 11:00-11:20 | ID263 , <i>Determination of Focal Laws for Centrifugally Cast Stainless Steel Using Time-Reversal Method</i> , Shan Lin, Shohji Hajime |
| 11:20-11:40 | ID307 , <i>Application of the Potential Method for Real-Time Crack Detection in High-Temperature Components</i> , Pavel Mares, Petr Zivny, Marek Mekuta |
| 11:40-12:00 | ID380 , <i>Complementary Use of Volumetric and Surface Non-Destructive Techniques for the Detection and Evaluation of Stress Corrosion Cracking in Critical Energy Assets</i> , Angelique Raude, Florin Turcu, Ghislain Morais |
| 12:00-12:20 | ID405 , <i>Direct Current Magnetic Flux Leakage Testing (DCMFL): Improving Repeatability for Oblique Defects by DC-Demagnetization</i> , Frank Eibofner, Friedrich Hecker |
| 12:20-12:40 | ID610 , <i>Tackling Advanced UT Techniques at High Temperatures</i> , Tim Stevenson, Maria Giampani, Roscoe Martin |
| Lunch | |
| 14:20-14:40 | ID244 , <i>Research on the Application of AI to Simulation-Based Micro-Defect Modeling and Diagnosis in Nuclear Power Plant Facilities</i> , Jaesun Lee, Soomin Lee, Kseniia Barashok, Yeongil Choi, Dokyung Pyun |
| 14:40-15:00 | ID631 , <i>Highly Integrated Solution for Corrosion Testing in the Field</i> , Benjamin Hoemske, Prashanth Chinta, Christoph Deters, Johannes Buechler, Stephan Falter |

A.2 Energy and Environment

ROOM 11.D2

15:00-15:20

ID641, *AI-Assisted In-Vessel Visual Inspections*, Thiago Osorio

Coffee break

15:40-16:00

ID322, *A New Concept for Calibration of Weld Seam Testing for HFI-Pipelines Using Embedded Mid-Wall-Reflectors*, Till Schmitte, Patrick Labud, Lena Thewes, Thomas Orth, Michael White, Christoph Weil, Marco Böcking

16:00-16:20

ID738, *Eddy Current Array for Inspecting J-Welds on the Reactor Vessel Head in Nuclear Power Plants*, Charles Tremblay, Sergio Loffredo, Mathieu Bouchard

16:20-16:40

ID954, *Digital vs Film Radiography Performance for High-Energy Nuclear Weld Inspection*, Steven Wissels, Johan Grauls

SS12 Active Thermography Techniques for NDT and Material Characterization

ROOM 12.A

- 9:00-9:20 **ID469**, *Superpixel Graph Attention Network for Crack Segmentation in Complex Components Using Automated Laser Thermography*, Sruthi Krishna Kunji Purayil, Rita Fioresi, Michela Lapenna, Philipp Daniel Hirsch, Julien Lecomagnon, Mathias Ziegler
- 9:20-9:40 **ID741**, *Shaping the Future of Thermography: Standardization as a Bridge between Innovation and Application*, Mathias Ziegler, Jochen Aderhold, Stéphane Amiel, Patrick Bouteille, Giuseppe Dell'Avvocato, Umberto Galietti, Eider Gorostegui Colinas, Richard Huillery, Ingmar Jakobi, Andreas Keller, Samuel Maillard, Günther Mayr, Malte Mund, Daniel Müller, Beate Oswald-Tranta, Vaclav Straka, Michal Svantner
- 9:40-10:00 **ID879**, *Linking Diffusive Fields to Virtual Waves as Their Propagative Duals*, Peter Burgholzer, Lukas Gahleitner, Guenther Mayr
- Coffee break**
- 10:20-10:40 **ID794**, *Finite Element Simulations and their Validation for Inductive Thermography*, Beate Oswald-Tranta, Jean-Marie Ehrenberger
- 10:40-11:00 **ID166**, *Measurement of Metallic Material Grain Size Using Total Focusing Ultrasonic Images*, Weixin Wang, Paul Wilcox, Jie Zhang
- 11:00-11:20 **ID671**, *Emissivity Compensation for Thermographic Inspection of Grey Cast Iron Components*, Philipp Daniel Hirsch, Sruthi Krishna Kunji Purayil, Nils Scheuschner, Julien Lecomagnon, Rainer Krankenhagen, Mathias Ziegler

Lunch

SS20 Technologies for Industrial Inspection Robots

ROOM 12.A

| | |
|-------------|---|
| 14:00-14:20 | ID137 , <i>Robot Ultrasonic Testing and CAD-Free Adaptive Scanning of Complex-Shape Metallic Parts for Aerospace Applications</i> , Alexey Bevetkiy, Andrey Bulavinov, Roman Pinchuk, Michael Okulla, Jens Kiehn |
| 14:20-14:40 | ID361 , <i>Optimized Methodology for Tomographic Reconstruction in X-Ray Inspection Using the CIVA Simulation Platform</i> , Victor Bussy, Julie Escoda, Anthony Touron, Marius Costin |
| 14:40-15:00 | ID480 , <i>Cognitive Robotic System for Adaptive Non-Destructive Inspection with Laser Thermography</i> , Bartosz Hyla, Łukasz Ambroziński, Łukasz Pieczonka |
| | Coffee break |
| 15:20-15:40 | ID561 , <i>Deep Learning Method for Defect Detection for Industrial Robot-based Magnetic Particle Inspection</i> , Kevin Schmitz, Daniel Groß, Florian Römer, Matthias Heinrich, Cemil Emre Ardic, Madalina Rabung, Samuele Martelli |
| 15:40-16:00 | ID838 , <i>Robotic Automation of MPI/FPI Inspections: System Integration, Performance, and AI-Assisted Evaluation</i> , Miroslav Šnirer, Patrik Backo, Radek Salač |
| 16:00-16:20 | ID223 , <i>Mobile Robot for Inspecting the Inside of Composite Profiles</i> , Abdalla Shahin, Lukas Hartung, Christian Eitzinger |

A.3 Industrial Technologies and Processes

ROOM 12.B

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| 9:00-9:20 | ID294 , <i>Magnetic Characterization of Structural Steels under Different Heat Treatment using Pulsed Eddy Current Testing</i> , Athanasios Kyrgiazoglou, Anastassios Skarlatos, Dimitrios Fasnakis, Maria Pappa |
| 9:20-9:40 | ID338 , <i>3D Weld Seam Sensor for the Detection of all types of Defects on the Material Surface</i> , Jun Zhao |
| 9:40-10:00 | ID357 , <i>Laser Ultrasound in Wire Arc Additive Manufacturing: Imaging of Internal Structure and Defects</i> , Norbert Huber, Maximilian Hoffmann, Gernot Mauthner, Bernhard Reitingner |
| 10:00-10:20 | ID397 , <i>New Technologies for Improving the Electroacoustic Performance of Transducers</i> , Galaad Pereyron, Philippe Dumasva |
| 10:20-10:40 | ID403 , <i>New Solutions Focused on Phased Array for the Inspection of High-Density Polyethylene</i> , Justin Wendorf, Florin Turcu |
| Coffee break | |
| 11:00-11:20 | ID519 , <i>Sub-THz Radar Line Camera for Inline NDT Applications</i> , Sven Leuchs, Christian Krebs |
| 11:20-11:40 | ID500 , <i>Advanced Ultrasonic Phased Array Inspection System with PaintBrush Technique for the Gapless Testing of Seamless Steel Pipes</i> , Sanjeevareddy Kolkoori, Thomas Weise, Daniel Koers, Claudia Jasperneite, Franz Eggbauer, Friedrich Lorenz |
| 11:40-12:00 | ID510 , <i>Eddy Current Scanner for Case Depth Measurement of Induction-Hardened Axle Bars and Stem Shafts</i> , Hooman Dejnabadi |
| 12:00-12:20 | ID514 , <i>Acoustic Resonance Testing (ARS/ARI) for Non-Destructive Evaluation of Cast and Advanced Manufactured Metal Components</i> , Hooman Dejnabadi |
| 12:20-12:40 | ID563 , <i>Beyond the HP/11 Reference: Architectural Evolution of Minifocus X-Ray Sources for Future NDT</i> , Arnaud Sottas, Marcel Odermatt |
| Lunch | |
| 14:00-14:20 | ID788 , <i>Non-Destructive Evaluation of Micro-Cracks Using Differential Electromagnetic Focusing Vision</i> , Gaige Ru, Bin Gao, Jiale Ye |
| 14:20-14:40 | ID536 , <i>Comparative Analysis of Non-Destructive Methods for Determining the Thickness of Welding Overlay (Cladding) in Alloy 625 and AISI 316</i> , Erik Del Forno, Nicola Marasco, Stefano Verdino, Riccardo D'Amico, Dario Tonali, Enrico Vignati |

A.3 Industrial Technologies and Processes

ROOM 12.B

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|-------------|---|
| 14:40-15:00 | ID654 , <i>TFM Inspection in lieu of RT on Welds of Thin WT Pipes in Stainless Steel</i> , Angelo Bruno, Pasquale Miniello |
| 15:00-15:20 | ID681 , <i>Automatic 3D Analysis of Asphalt Mixtures using High-speed CT & AI Segmentation</i> , Daniel Cuadra-Rodriguez, Eusebio Solorzano, Lorena Palomo Luis, Jose Simón Grau, Victor Garcia Rabadán, Gloria Motos Cascales |
| | Coffee break |
| 15:40-16:00 | ID723 , <i>A Modular Phased Array-Based In-Line UT System Enabling High-Speed, High-Reliability NDT</i> , Herve Saulais, Cyril Thibault, Andrzej Wiatrek, Dominique Braconnier |
| 16:20-16:40 | ID866 , <i>The New DGZfP Guideline D8 on Displays for Image Evaluation, what is the Message for the User?</i> , Uwe Zscherpel, Klaus Bavendiek |
| 16:40-17:00 | ID724 , <i>RopeWatcher: Advancing Predictive Maintenance through Continuous Magneto-Inductive Rope Monitoring</i> , Bruno Vusini, Daniel Rossi, Enrico Furno |
| 17.00-17:20 | ID198 , <i>Super-resolution ultrasonic array imaging of multilayer structures</i> , Xinqi Tian, Binwen Li, Jiaxin Li, Bo Zhao, Jiubin Tan |
| 17.20-17:40 | ID734 , <i>On-Site Calibration Breakthrough for Phased Array UT Systems</i> , Dominique Braconnier, Wolfram Deutsch |

M.5 Ultrasonics

ROOM 12.C

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| 9:00-9:20 | ID246 , <i>High-resolution 3D Ultrasonic Imaging by 1024-element 2D Matrix Array Transducers</i> , Yoshikazu Ohara, Ryuya Kawaguchi, Koki Shimizu, Yudai Yashiro, Yuto Fujikawa, Akira Nagakubo |
| 9:20-9:40 | ID612 , <i>Advanced Methodology of Ultrasonic Testing (UT/PA) of Thin-Walled Tubes: Replacement of Radiographic Inspection and Efficiency Improvement of NDT Processes</i> , Petr Žbánek, Jan Andrlík |
| 9:40-10:00 | ID669 , <i>From Data Acquisition to Reliable Defect Characterization: Industrial Applications of FMC, TFM and PCI</i> , Alessandro Magni, Marco Casaril, Luigi Corsi |
| 10:00-10:20 | ID703 , <i>Non-Destructive Characterization of the Curing Process of Thick-Film Adhesive Bonds using Transverse Ultrasonic Waves</i> , Greta Scholle, Christian Mathiszik, Franz Hielscher, Johannes Koal, Hans Christian Schmale |
| 10:20-10:40 | ID800 , <i>Multi-frequency Time Reversal Based Super Resolution Imaging Performance Studies for Ultrasonic Nondestructive Testing</i> , Chengguang Fan, Xiaozhen Zhang, Kunyou Jiang, Zongyu Wu, Quan Chen, Wenlong Zhang |
| Coffee break | |
| 11:00-11:20 | ID317 , <i>Simulations and Experiments to Optimize Laser Ultrasonic Testing</i> , Benjamin van Elburg, Patrick H. Jansen, Arno Volker |
| 11:20-11:40 | ID839 , <i>Advances in Ultrasonic Testing for Clad and Lined Pipeline Girth Welds Using Virtual Source-TFM</i> , Burak Bölükbaşı, Petr Kulikov, Özgür Özünlü |
| 11:40-12:00 | ID869 , <i>Ultrasonic Scattering utilizing Distributed Synthetic Microstructures</i> , Showmic Islam, Joseph A. Turner |
| 12:00-12:20 | ID887 , <i>Comparison of Analytical and Numerical Methods for the Diffraction of Ultrasound from Surface-breaking Cracks</i> , Christopher M. Ashworth, James Gaffney, Jason F. Ralph, Ian Thompson, Stewart G. Haslinger |
| Lunch | |
| 14:00-14:20 | ID923 , <i>SITAU-II: A High-Performance Ultrasound Phased Array Research Platform</i> , Roberto Giacchetta, Ricardo González Bueno, Jorge Fernandez Cruza, Eduardo Moreno Hernandez |
| 14:20-14:40 | ID927 , <i>AirScope: 20 Years Innovating in Non-Contact Ultrasound Aeronautical Inspection</i> , Roberto Giacchetta, Ricardo González Bueno, Jorge F. Cruza, Eduardo Moreno Hernández |

M.5 Ultrasonics

ROOM 12.C

- 14:40-15:00 **ID936**, *Parallel Acquisition of PCI and TFM Images for Enhanced Assessment Accuracy*, Kevin Westra, Adri van den Biggelaar, Niels Pörtzgen
- 15:00-15:20 **ID948**, *Ultrasonic Characterisation of Grain Orientations, Elastic Tensor and Geometry of Thick-section Welds using Deep Learning*, Lucas Queiroz Machado, Thomas Blumensath, Vykintas Samaitis, Michael Lowe, Michal Kalkowski
- 15:20-15:40 **ID729**, *In Line Inspection of Hex Bars with Advanced Ultrasonic Phased Arrays*, Cyril Thibault, Jorn Bolten, Wolfram Deutsch, Dominique Braconnier

Coffee break

SE.1 Academia NDT International Research Session: Critical and Emerging Technologies at the forefront of NDE

ROOM GS A

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| 9:00-9:15 | Welcome address, Shant Kenderian |
| 9:15-9:40 | ID616 , <i>The Evolution and Intelligence of Imaging in NDT: From Visual Inspection to AI-Driven Diagnostics</i> , Silvano Vergura |
| 9:40-10:00 | ID149 , <i>Breaking Barriers in NDE: AI-Enhanced Solutions for Future Smart NDE</i> , Roman Gr. Maev |
| 10:00-10:20 | ID583 , <i>Feature-Based Machine Learning Approach for Adhesive Joint Integrity Assessment</i> , Elena Jasiūnienė, Vyintas Samaitis |
| 10:20-10:40 | ID831 , <i>Master-level teaching strategies supplemented by short courses: AI-based initiatives for Intelligent Inspection</i> , Serge Dos Santos, Joseph Moysan, Philippe Duvauchelle |
| 10:40-11:00 | ID 823 , <i>Advancing a Research Agenda on the Ethical and Human Factors that will be shaping the evolution of AI/ML/DL enhanced NDE processes and Emerging Technologies</i> , Fernandez Orozco, Ramon Salvador; Dos Santos, Serge |
| | Coffee break |
| 11:20-11:45 | ID925 , <i>Recent Trends in Digital Industrial Radiography and CT</i> , Uwe Ewert |
| 11:45-12:05 | ID129 , <i>Detectability of Cracks from Notches Using Digital Radiography</i> , Shant Kenderian, Joseph T. Case, Paul M. Adams, Anita Gregorian |
| 12:05-12:25 | <i>Damage mechanisms in thermoplastics - what do we know and does the Berlin Aquadome accident call for a rethink?</i> Marc Kreuzbruck |
| 12:25-12:45 | ID 873 , <i>Metal Magnetic Memory-Based Quantitative Evaluation of Surface Defects in Wire and Arc Additive Manufactured Steel</i> , Sheng Bao, Yan Li, Jingxuan Hong |
| 12:45-13:00 | Closing remarks, Shant Kenderian |

Lunch

SE.3 INAIL: Safety and Reliability of Work Equipment

ROOM GS C

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| 9:00-9:20 | ID267 , <i>A Novel Macro-Level Model for Evaluating Health and Safety Training in Non-Destructive Testing Using Virtual Reality</i> , Antonella Pireddu, Luca Maurizio Lusuardi, Claudia Giliberti, Canio Mennuti |
| 9:20-9:40 | ID296 , <i>Structural Integrity of GFRP (Glass Fiber Reinforced Polymer) Non-Pressurized Reactor – Main Aspects and Case Study Analysis</i> , Domenico Di Fonzo, Giuseppe Augugliaro, Fausta Delli Quadri, Romualdo Marrazzo, Fabrizio Vazzana, Vincenzo Bartolozzi |
| 9:40-10:00 | ID302 , <i>Non-Destructive Testing for the Safety of an Elevated Work Platform</i> , Luigi Monica, Sara Anastasi |
| 10:00-10:20 | ID303 , <i>Non-Destructive Testing and Service Life Analysis on GRP or PRFV Equipment</i> , Alessandro Russo, Alberto Blanco, Roberto Nicosia, Armando Falla, Nicola Altamura, Roberto Acerboni, Francesco Boella, Angelo De Palma, Gianluca Saputi |
| 10:20-10:40 | ID306 , <i>From Compliance to Prognostics: A Proposal for a New Regulatory Framework Based on NDE 4.0 and Historical Failure Data</i> , Francesco Santoro, Salvatore Spinoso, Paolo Infortuna |
| | Coffee break |
| 11:00-11:20 | ID336 , <i>Confirmation of Design and Construction Parameters Based on Operational Experience</i> , Riccardo Balistreri, Francesco Giacobbe |
| 11:20-11:40 | ID430 , <i>Life Assessment of Martensitic Steels — Experimental Validation Activity of XRD by Testing Martensitic Steels Samples from Interrupted Uniaxial Creep Tests</i> , Andrea Tonti, Pietro De Blasi, Susanna Matera, Oriana Tassa |
| 11:40-12:00 | ID901 , <i>Non-Destructive Testing for HDPE Pipes</i> , Giuseppe Augugliaro, Fabio Brini, Luca Bruzzo, Alessandro Demma, Canio Mennuti, Paolo Quaresima |
| 12:00-12:20 | ID471 , <i>Analysis of Corrosive Phenomena in Epichlorohydrin Storage Containers. Integrity Testing Procedures</i> , Carmine Piccolo, Giovanbattista Vaccaro, Gianluca Vena, Orazio Amati |
| 12:20-12:40 | ID542 , <i>Advanced Diagnostic Inspection Techniques Supporting Engineering Assessments</i> , Stefano Sandon, Matteo Ballestra, Giovanni Federico Ramella, Valentina Zanni, Romano Ciancio |
| 12:40-13:00 | ID543 , <i>From Compliance to Prognostics: A Proposal for a New Regulatory Framework Based on NDE 4.0 and Historical Failure Data</i> , Francesco Santoro, Salvatore Spinoso, Paolo Infortuna |
| | Coffee break |

SE.3 INAIL: Safety and Reliability of Work Equipment

ROOM GS C

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|---------------------|---|
| 14:00-14:20 | ID590 , <i>Use of Acoustic Cameras to Improve the Efficiency and Safety of Industrial Plants</i> , Danilo Sallustio |
| 14:20-14:40 | ID620 , <i>Integrity Inspection of a Thermoelectric Power Plant and Elimination of Dissimilar Metal Welds</i> , Raffaele Iovene, Roberta Vasile, Marcello Di Giacomo, Marino Chendi |
| 14:40-15:00 | ID774 , <i>Non-Destructive Testing of Lifting Equipment: Assessing Residual Capacity and Ensuring Operational Safety</i> , Roberto Longo, Raffaele Fabiano, Raffaele Donato, Fabio Badolato, Anthony Cosentini, Maurizio Diano |
| 15:00-15:20 | ID683 , <i>Piping Systems with Innovative Materials: Damage Mechanisms, Design Criteria and Assessment Challenges</i> , Elisa Pichini Maini, Antonello Alvino, Alessandra Antonini, Daniela Lega |
| 15:20-15:40 | ID756 , <i>Application of the Metallographic Replica Investigation Technique for the Evaluation of the Microstructural Condition of Industrial Components - Case Histories</i> , Carlo Dellabiancia, Mattia Dellabiancia, Romano Ciancio |
| Coffee break | |
| 16:00-16:20 | ID722 , <i>Visual Testing of External Surfaces of Equipment Using a Drone</i> , Emanuele Artenio, Giuseppe Augugliaro, Riccardo Balistreri, Francesco Giacobbe |
| 16:20-16:40 | ID793 , <i>Ultrasonic Phased Array In lieu of Radiography for the Periodical in Service Inspection of an Austenitic Steel Pressure Vessel – A Case Study</i> , Antonino Andolina, Matteo Bartesaghi, Rosario Molica Nardo |
| 16:40-17:00 | ID846 , <i>AI Creep Life-Prediction Assisted by Creep Damage Evaluation</i> , Arsalan Nazim, Andrea Tonti, Elisabetta Gariboldi |
| 17:00-17:20 | ID448 , <i>Target 3D for Visual Testing with Drones</i> , Emanuele Artenio, Giuseppe Augugliaro, Riccardo Balistreri, Davide Gattamelata, Francesco Giacobbe, Omero Spanu |

FRIDAY 19 JUNE

10:00-11:30
Coffee Break

12:30-14:00
Lunch

AM.3 Data Driven Approaches

ROOM 11.A1

| | |
|---------------------|---|
| 9:00-9:20 | ID410 , <i>Study and Modelling of Non-Linear Effects for Acoustic Quality Monitoring of an Ultrasonic Welding Process</i> , Timo Reindl, Phi-Long Chung, Christian Bonten, Marc Kreuzbruck |
| 9:20-9:40 | ID272 , <i>Accelerated Machine Learning-Based High Volume Data Interpretation for Ultrasonic Inline Pipe Inspections</i> , Hongyu You, Mehrab Zamanian, Chris Peyton, Alistair Lawley, Vedran Tunukovic, Nick Bettley, Ehsan Mohseni, Gordon Dobie |
| 9:40-10:00 | ID321 , <i>Unsupervised Defect Detection in Industrial Images with Conformal Anomaly Detection and VAEs</i> , Flora Estermann, Philippe Guy, Philippe Delachartre, Valérie Kaftandjian |
| 10:00-10:20 | ID449 , <i>Optimizing Tank Integrity Management: Advanced Data-Driven Approaches for Inspection Interval Optimization</i> , Andrew Simpson, Matthew Boat |
| 10:20-10:40 | ID666 , <i>Adaptive Imaging and Double Profilometry for Thickness Measurement of Complex Components</i> , Nans Laroche, Sylvain Deutsch |
| Coffee break | |
| 11:00-11:20 | ID451 , <i>Multiphysics Monitoring and NDT of Wire Arc Additive Manufacturing</i> , Douglas Serrati, André Ramalho, Nuno Mendes, Miguel A. Machado, Pedro Vieira, Rodolfo Oliveira, João P. Oliveira, Telmo G. Santos |
| 11:20-11:40 | ID665 , <i>Real-Time Adaptive Imaging Applied from the Weld Bead</i> , Nans Laroche, Sylvain Deutsch |
| 11:40-12:00 | ID706 , <i>Self Learning Anomaly Detection on a Multidimensional Feature Space</i> , Oguzhan Sanliturk, Kevin Schmitz |
| 12:00-12:20 | ID760 , <i>Suppression of Geometrical Artifacts from Acoustic Lenses through Low-Rank Approximation</i> , Vinicius L. Costa, Thiago E. Kalid, Matheus F. Dário, Tatiana de A. Prado, Gustavo P. Pires, Daniel R. Pipa, Thiago A. R. Passarin |

AM.5 NDE 4.0

ROOM 11.A2

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|---------------------|--|
| 9:00-9:20 | ID328 , <i>Automated Borescope Inspection with AI Support for Visual Testing</i> , Marco Induti, Massimiliano Tinari, Manuel Yersin, Erik Stara, Luca Scaccabarozzi |
| 9:20-9:40 | ID113 , <i>AI-Based Signal Analysis and Flaw Detection for Eddy Current Testing of Heat Exchanger Tubes</i> , Ryohei Fujita, Misaki Sanokawa, Shota Yamabe |
| 9:40-10:00 | ID133 , <i>Economic Value of NDE 4.0</i> , Lennart Schulenberg, Jason Robbins |
| 10:00-10:20 | ID177 , <i>Machine Learning-Based Classification of Reclaimed Structural Steel Using Non-Destructive Testing</i> , Shagea Alqawzai, Thi Qui Nguyen, Mingshan Zhao, Linyun Zhang |
| 10:20-10:40 | ID189 , <i>Depth and Height Measurement of Subsurface Defects in Non-Ferromagnetic Metallic Materials with Eddy Current Testing Utilizing Machine Learning</i> , Maria Poulaki, Vyron Drosos, Nikolaos Poulakis, Apostolos Kotouzas |
| Coffee break | |
| 11:00-11:20 | ID447 , <i>Non-Destructive Electromagnetic Sensor Array for Spatially Resolved Phase Transformation Monitoring in Steel Narrow Strip and Rod Processing</i> , Fanfu Wu, Lei Zhou, Shaun Hobson, Matthew Green, Claire Davis |
| 11:20-11:40 | ID498 , <i>DICONDE for Dent Digital Twins: Data Standardization for Aircraft Structural Inspections</i> , Geo Jacob, Aditi Mhatre, Salvatore Merola, Evgeny Grischenko, Ann-Kathrin Koschlik, Florian Raddatz, Gerko Wende |
| 11:40-12:00 | ID516 , <i>Connecting AAS and LLMs for Controlling NDT Devices</i> , Frank Leinenbach, Cemil Emre Ardic, Dharma Panchal, Florian Römer |
| 12:00-12:20 | ID695 , <i>GPU-Accelerated Phased-Array Ultrasound Scanner for Integration of AI/ML Methods</i> , Marcin Lewandowski, Mateusz Walczak, Piotr Jarosik, Piotr Karwat |

M.3 Guided waves

ROOM 11.B1

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| 9:00-9:20 | ID155 , <i>Comprehensive Inspection of Large-Diameter Pipes Combining Guided Wave Screening and Scanning</i> , Keith Vine, Brian Pavlakovic, Thomas Vogt |
| 9:20-9:40 | ID168 , <i>Feasibility Study on Onload Guided Wave Testing for Evaluating Boiler Spine Integrity and Insulation Performance</i> , John Jian |
| 9:40-10:00 | ID188 , <i>Advancements in Guided Wave Inspection: LRUT Focusing and MRUT Sizing Techniques</i> , Levente Bazsanyi |
| 10:00-10:20 | ID281 , <i>Damage Detection in Thin-walled Structures Using Guided Waves and an Optical Microphone</i> , Caspar Wasle, Björn Wohltmann, Rebecca Rodeck, Gerko Wende |
| 10:20-10:40 | ID289 , <i>Quantitative Characterisation of Defects in Pipes Using Guided Wave Testing with Geometrical Full Waveform Inversion</i> , Elias Rabbat, Peter Huthwaite |
| Coffee break | |
| 11:00-11:20 | ID431 , <i>Corrosion Mapping in Buried Section of Monopoles Using Magnetostrictive Transducer Arrays</i> , Sergey Vinogradov, Jay Fisher, Patrick Grädel, Pierre Dupuis, Dominik Hirschhausen |
| 11:20-11:40 | ID502 , <i>Temperature Compensation for Guided Wave Signals Using Denoising Autoencoders</i> , Matthew Newson, Clément Fisher |
| 11:40-12:00 | ID854 , <i>Guided-wave-based Information Transfer through Parametric Encoding of Ultrasonic Signals</i> , Beata Zima |
| 12:00-12:20 | ID943 , <i>An Innovative Thermocouple-Waveguide Sensor System for Measuring the Temperature of a Hot Melter</i> , Suresh Periyannan, Krishnan Balasubramaniam |

SS23 New Trends in Non-Destructive Testing of Automotive Structures

ROOM 11.B2

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|---------------------|--|
| 9:00-9:20 | ID759 , <i>Torque Evaluation of Automotive Connecting-Rod Bolts Using Piezoelectric Sensors and Contact Acoustic Nonlinearity Methods</i> , Matteo Febo, Giovanni Erdino, Francesco Ciampa, Davide Palumbo, Umberto Galiotti, Maria Cinefra, Simone De Carolis, Leonardo Soria, Maria Michela Dell'Anna, Maria Stella Leone, Francesca Derobertis, Piero Mastroilli, Mattia Mele, Sebastiano Parisi, Gianmarco Milan, Damiano Rossi, Eugeniu Grabovic, Maurizia Seggiani, Irene Anguillesi, Enrico Ciulli, Massimiliano De Agostinis, Gianluca Di Egidio, Luca Lorenzetti, Carla Martini, Ester D'Accardi |
| 9:20-9:40 | ID628 , <i>Non-Destructive Testing of Resistance Spot Welds by Magnetic Evaluation</i> , Christian Mathiszik, Johannes Koal, Hans Christian Schmale, Uwe Füssel |
| 9:40-10:00 | ID875 , <i>State-of-the-art Ultrasonic Spot Weld Inspection – Manual, Robot-based, and Automated with AI</i> , York Oberdoerfer, Roman Ma |
| 10:00-10:20 | ID457 , <i>AI in Ultrasonics Spot Weld Inspections</i> , Christian Wagner, Jan Koutník |
| Coffee break | |
| 10:40-11:00 | ID688 , <i>Ultrasonic Testing of Projection-Welded Foils for Bipolar Plates</i> , Franz Hielscher, Martin Weber, Johannes Koal, Hans Christian Schmale, Jere Hyvönen, Ari Salmi |
| 11:00-11:20 | ID386 , <i>Advancing Quality Assessment of Adhesive Bonds through Automated Laser-Excited Ultrasonic Inspection</i> , Tobias Ziegelwanger, Ryan Sommerhuber, Josef Pörnbacher, Balthasar Fischer |
| 11:20-11:40 | ID787 , <i>Weld Quality Assessment in Ultrasonically Welded Thermoplastic Composites using Infrared Thermography</i> , Anshul Sharma, Baris Caglar, Clemens Dransfeld |

HF.1 Qualification, Certification, Standards and Training

ROOM 11.C1

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| 9:00-9:20 | ID903 , <i>On the Basis of a Standard for NDT-CE Operators Training</i> , Sebastian Laprida, Cesar Belinco |
| 9:20-9:40 | ID951 , <i>Introducing the ASNT 9712 Certification Program to Europe: A Performance-Based ISO 9712 Certification Approach</i> , Paul Lang, Tomas Zavadil |
| 9:40-10:00 | ID942 , <i>Availability and Procedure for Certification acc. to ASNT 9712 in Europe</i> , Tomas Zavadil, Paul Lang |
| 10:00-10:20 | ID956 , <i>A New ISO 9712 ET Certification Structure for a Modern World – Including ISO 9712 Eddy Current Array Training / Certification</i> , James Watson |
| 10:20-10:40 | ID290 , <i>The Evolution of Non-Destructive Testing (NDT) in Albania: From Post-War Foundations to European Integration (1945–2025)</i> , Konda Enkelejda, Sotja Dhimitraq, Zeqo Migena |

Coffee break

SS9 Non-destructive testing of batteries and energy storage systems

ROOM 11.C2

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|---------------------|---|
| 9:00-9:20 | ID330 , <i>Multi-stage Image Processing Approach for 3D-CT Based in- or at-line Inspection of Battery Cells</i> , Sven Gondrom-Linke, Tiago Ramos, Simon Schmid |
| 9:20-9:40 | ID506 , <i>Resonant Eddy Current Sensing for Contactless Monitoring of Lithium-Polymer Cells</i> , Alessandro Sardellitti, Federico Carere, Ahmed Hishman Br, Silvia Sangiovanni, Marco Laracca |
| 9:40-10:00 | ID523 , <i>An Innovative Non-Invasive Method for State of Charge Estimation in Lead-Acid Cells via Eddy Current Sensing</i> , Federico Carere, Alessandro Sardellitti, Ahmed Hisham Br, Silvia Sangiovanni, Marco Laracca |
| 10:00-10:20 | ID589 , <i>From Reactor to Lab: Scaling Neutron Radiography for Industrial NDT Applications</i> , Serge Duarte Pinto, Arthur Bongrand, Olivier Bonnet, Julie Dalleau, Anthony David, Sean Gardell, Johann Kadionik, Olivier Merlin, David Pasquale, Juan Reyes, Steve Ritzau, Axel Rizzo, Florian Robert, Dmitriy Tipikin, Alexis Toussaint, Vincent van Steenberg |
| 10:20-10:40 | ID619 , <i>An Improved EIS for Battery State Estimation: a Non-invasive Measurement Approach</i> , Alessio Miele, Filippo Milano, Mario Molinara, Luigi Ferrigno |
| Coffee break | |
| 11:00-11:20 | ID623 , <i>Observation of Electrolyte Dynamics in Li-ion Batteries via In-situ Computed Tomography</i> , Jakub Šalplachta, Zuzana Stravová, Gergő Ballai, Dániel Sebok, Ákos Kukovecz |
| 11:20-11:40 | ID777 , <i>Time-to-Insight as a Metric for Battery CT Inspection Full</i> , Christopher Zepp |
| 11:40-12:00 | ID884 , <i>Linear and Nonlinear Ultrasonic Features for the Estimation of the State-of-Charge in Lithium-ion Battery Cells</i> , Gregorio Cappuccino, Domenico Luca Carnì, Stefano Laureti, Vincenzo Maccaronio, Rocco Zito, Marco Ricci |

M.8 Infrared Thermography

ROOM 11.D1

- 9:00-9:20 **ID462**, *Thermographic Monitoring of a 70+ m Full-scale Wind Turbine Blade Fatigue Test*, Michael Stamm, Somsubhro Chaudhuri, Patrick Grzywok, Julien Lecompagnon
- 9:20-9:40 **ID513**, *Non-Destructive Thickness Estimation of Extreme High-Speed Laser Cladding Coatings on Brake Discs Using Eddy Current and Photothermal Techniques*, Michele Carboni, Omar Madkouri, Barbara Previtali, Geoffrey Bruno, Paolo Calefati
- 9:40-10:00 **ID712**, *Effect of Sandwich Honeycomb Core features on Thermography Inspection with Pulsed Optical Excitation*, Fethi Dahmene, Samuel Maillard, Jean-Nicolas Frouart, André Baillard
- 10:00-10:20 **ID732**, *Active Thermography with Inductive Excitation for Grinding Burns Detection - Application to Aircraft Landing Gear Components*, Sylvain Plouvier, Samuel Maillard, Jean Nicolas Frouart, Fethi Dahmene, Benoit Gérardin, Olivier Ghibaudo, Thibaut Schmoor, Timothée Vinet
- 10:20-10:40 **ID789**, *Integrated Non-Destructive Evaluation of Bacteria-Based Self-Healing Concrete*, Krit Sukprasit, Keisuke Nitta, Katsufumi Hashimoto, Takafumi Sugiyama

Coffee break

A.4 Transportation

ROOM 11.D2

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| 9:00-9:20 | ID118 , <i>On-Site Quantitative Characterization and Performance Verification of a New Phased-Array Instrument for the Automated PAUT Inspection of Steel Bars in Accordance with EN ISO 18563-1</i> , Sanjeevareddy Kolkoori, Cord Asche, Claudia Jasperneite, Daniel Koers, Josef Maier |
| 9:20-9:40 | ID299 , <i>Effective and Modern Methods of Testing Large Forgings or Castings with Customer-Designed MT Systems</i> , Ondrej Doubek |
| 9:40-10:00 | ID432 , <i>Integrated System for Advanced Monitoring of Steel Ropes based on 3D Visual and Dimensional Analysis to Support the Magneto-inductive Method (MRT)</i> , Alessandro Rossi, Matteo Liuzzi, Davide Moschitti, Cristiano Bonetti, Davide Zanetti |
| 10:00-10:20 | ID483 , <i>Enablers to boost the benefits of Artificial Intelligence for NDT</i> , Cédric Bertrand, Silvère Barut |
| Coffee break | |
| 10:40-11:00 | ID737 , <i>Assessing the Potential of Advanced Imaging with Low Frequency Rayleigh Waves: from Single Beam A-scan to TFM and Phase Coherence Imaging</i> , Florin Turcu, Raphaël Côté-Vachon |
| 11:00-11:20 | ID747 , <i>Recent Advances in Orbital Weld Inspection using Eddy Current Array Testing</i> , Mathieu Bouchard, Louis-Daniel Thérroux, Sergio Loffredo, Alain Haddad, Sergio Grond |
| 11:20-11:40 | ID782 , <i>Computational Modeling Parameters to Consider when Reproducing GPR Data as it Applies to Bridge Decks</i> , Nicole Martino, Ken Maser, Ralf Birken, Camila Wendland |
| 11:40-12:00 | ID802 , <i>Integrated Non-Destructive Testing Concept for Type 4 Hydrogen Storage Tanks</i> , Soonho Won, Hak-Sung Lee, Martin Schulze, Till Schulze, Henning Heuer |

M.2 Microwave, mmWave, THz

ROOM 12.A

| | |
|---------------------|---|
| 9:00-9:20 | ID255 , <i>Handheld Terahertz Optoelectronic FMCW Radar for Nondestructive Thickness Measurements of Paint Coatings on Glass Fiber-Reinforced Composites</i> , Shiva Mohammadzadeh, Raphael Hussung, Dominik Gundacker, Maris Bauer |
| 9:20-9:40 | ID261 , <i>Real-Time Non-Contact Monitoring of Micromachining Tools Using mmWave FMCW Radar</i> , Kamal Khalil, Ahmed Abotoor, Mohamed H. Hassan, Zekai Murat Kilic, Michael D. O’Toole, Anthony J. Peyton |
| 9:40-10:00 | ID301 , <i>Development of an Optimized Non-Contact SFCW-SAR Scanning System for Concrete Structures</i> , Joo-Hyung Lee, Changbin Joh, Ji-Young Choi |
| 10:00-10:20 | ID305 , <i>Microwave Inspection of HDPE Pipes and Joints</i> , Alessandro Demma, Victor Manuel Valle, Guillermo Garcia Aguilar |
| 10:20-10:40 | ID351 , <i>Terahertz Inline Measurement System for Continuous Tracking of Inner Pipe Positions During the Production of Insulated Pipe Systems</i> , Raphael Hussung, Rodrigo Gantenbein, Fabian Friederich, Jürgen Kress, Maris Bauer |
| Coffee break | |
| 11:00-11:20 | ID417 , <i>Electrical Reflectometry for Early Fault Detection in Power Cables</i> , Tim Whitmore, Constantinos Onoufriou, Lujia Chen, Anthony Peyton, Guangqiao Xu |
| 11:20-11:40 | ID438 , <i>High-Resolution FMCW Radar for Non-Destructive Testing of RAAC Structures</i> , Kamal Khalil, Samuel J. I. Forster, Frank J. W. Podd, Michael D. O’Toole, Anthony Peyton |
| 11:40-12:00 | ID518 , <i>Millimeter Wave Radar Technology for NDT Applications</i> , Sven Leuchs, Christian Krebs |
| 12:00-12:20 | ID791 , <i>Compact UWB Antenna-Based SFCW Radar with Fast Delay-and-Sum Algorithm for Concrete Scanning</i> , Joo-Hyung Lee, Gyeongyong Jeong, Keunhee Cho, Ji-Young Choi, Moon-Que Lee, Changbin Joh |
| 12:20-12:40 | ID842 , <i>Calibration-Free Measurement of the Thickness of Non-Metallic Coatings on Metals by a Millimeter-Wave Sensor</i> , Valeri Mikhnev, Wojciech Knap |
| Lunch | |
| 15:15 | Closing Cerimony - Talk Arena |