



SMAR 2026

8th International Conference on Smart Monitoring, Assessment and Rehabilitation of Civil Structures

Daily Overview -- FRIDAY

8:30am -				
9:00am -				
9:00am -	KS 03: Keynote lectures Location: POT 81 Chair: Moslem Shahverdi Chair: Elyas Ghafoori Speakers: Carmelo Gentile and Juliane Wagner			
10:30am -				
11:00am -				
11:00am -	MS07-1: Distributed fiber optic strain sensing for bridge structural health monitoring Location: POT 151 Chair: Bertram Richter Chair: Steffen Marx	MS14: Post-disaster bridge assessment – an integrated approach from monitoring to number crunching Location: BEY E40 Chair: Michael Polter Chair: Tobias Mansperger Chair: Karsten Menzel	MS21: Bio-based materials for seismic retrofit of existing structures – enhancing structural performance and environmental sustainability Location: BEY E17 Chair: Antonio Formisano Chair: Emilia Meglio Chair: Massimiliano Giffre Chair: Chiara Pepi Chair: Marius Mosoarca Chair: Francesca Roscini	MS24-1: Non-destructive testing and monitoring of timber structures Location: POT 51 Chair: Cristoforo Demartino Chair: Michele Mirra Chair: Vittoria Borghese Chair: Angelo Aloisio Chair: Martina Sciomenta Chair: Antonio Sandoli 7th Session Chair: Riggio, Mariapaola / Oregon State University, US
12:30pm -	MS30-1: Video-based and imaging techniques for structural monitoring Location: BEY 138 Chair: Ivan Roselli Chair: Stefano De Santis Chair: Marialuigia Sangirardi Chair: Alessandro Zona	MS32: Crowdsourced and indirect approaches to structural health monitoring Location: BEY 117 Chair: Maria Pina Limongelli Chair: Thomas Matarazzo Chair: Zhenkun Li Chair: Chul-Woo Kim	PS1: Structural health monitoring and damage detection Location: BEY 127 Chair: Pavel Ryjáček	PS3: Advanced cementitious and composite materials Location: BEY 245 Chair: Silke Scheerer silke.scheerer@tu-dresden.de
12:30pm -	PS5: Structural strengthening, retrofit and structural resilience Location: POT 112			
2:00pm -				
2:00pm -	MS01: Structural health monitoring and assessment of aging railway infrastructures Location: BEY E40 Chair: Chao Wang Chair: Zhanchong Shi Chair: Jaime Gonzalez-Libreros Chair: Gabriel Sas	MS07-2: Distributed fiber optic strain sensing for bridge structural health monitoring Location: POT 151 Chair: Bertram Richter Chair: Steffen Marx	MS11: Monitoring of corrosion relevant parameters Location: BEY E17 Chair: Rebecca Achenbach Chair: Sylvia Keßler Chair: Jörg Harnisch	MS15: Data-driven monitoring, modelling and assessment strategies for resilient infrastructure Location: BEY 117 Chair: Mohammad Shamim Miah Chair: Subhra Majhi Chair: Humera Mughal
4:00pm -	MS17: Distributed fiber optical sensing (DFOS) in structural engineering research Location: BEY 127 Chair: Yasmin Lemcherreq Chair: Christoph Czaderski	MS22-2: Advances in fiber optic sensing solutions for infrastructure, geotechnics, and earth sciences Location: BEY 245 Chair: Massimo Facchini Chair: Luca Schenato Chair: Lorenzo Brezzi	MS24-2: Non-destructive testing and monitoring of timber structures Location: POT 51 Chair: Cristoforo Demartino Chair: Michele Mirra Chair: Vittoria Borghese Chair: Angelo Aloisio Chair: Martina Sciomenta Chair: Antonio Sandoli 7th Session Chair: Riggio, Mariapaola / Oregon State University, US	MS30-2: Video-based and imaging techniques for structural monitoring Location: BEY 138 Chair: Ivan Roselli Chair: Stefano De Santis Chair: Marialuigia Sangirardi Chair: Alessandro Zona
4:30pm -				
4:30pm -	Closing ceremony Location: POT 81 Chair: Yvonne Ciupack Chair: Steffen Marx			
6:00pm				

MS07-1: Distributed fiber optic strain sensing for bridge structural health monitoring

Time: Friday, 28/Aug/2026: 11:00am - 12:30pm · Location: POT 151
Session Chair: Bertram Richter
Session Chair: Steffen Marx

Distributed fibre optic sensors for bridge health measurements: from small to large scale

Biliszczyk, Jan¹; Bednarski, Łukasz²; Sieńko, Rafał³; Teichgraeber, Marco¹; Zuziak, Katarzyna⁴; Howiacki, Tomasz⁴

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Structural health monitoring of bridges using distributed fiber optic sensing

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Long-term baseline stability assessment of a BOTDA-based fiber optic sensing textile for bridge monitoring

Cui, Guoqiang¹; Wu, Rui¹; Cao, Lidan¹; Abedin, Sabrina¹; Abazarsa, Maryam²; Cao, Lucas³; Yu, Tzuyang²; Wang, Xingwei¹

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Realtime DFOS based SHM of a highway bridge

Künzel, Andreas¹; Tomann, Christoph²

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Distributed fiber optic sensors as part of a hybrid structural health monitoring system of an extradosed bridge

Piatek, Bartosz¹; Siwowski, Tomasz¹; Olaszek, Piotr²; Sakowski, Artur²; Sieńko, Rafał³; Bednarski, Łukasz⁴

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Correction of temperature-induced effects in distributed fiber optic strain measurements

Dohnalik, Petr; Boros, Vazul; Vorwagner, Alois; Lachinger, Stefan

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MS14: Post-disaster bridge assessment – an integrated approach from monitoring to number crunching

Time: Friday, 28/Aug/2026: 11:00am - 12:30pm · Location: BEY E40

Session Chair: Michael Polter

Session Chair: Tobias Mansperger

Session Chair: Karsten Menzel

UAV-based data acquisition for structural digital twins

Lüdicke, Emilie¹; Alt, Maximilian¹; Pöhlmann, Frank¹; Polter, Michael²

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An IFC 4.3 ontology hidden damages framework and Python ingestion pipeline for hidden bridge damage representation

Nisal, mukta; Karsten, Menzel

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Damage detection with statFEM-VFM

Morini, Andrea; Urrea-Quintero, Jorge-Humberto; Wessels, Henning

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Continuous coda wave based monitoring of the Nibelungenbrücke Worms

Epple, Niklas^{1,2}; Hau, Julia^{1,2}; Fontoura Barroso, Daniel^{1,2}; Focht, Sven^{1,2}

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Physics-informed transformer for real-time bridge deflection estimation using sensor fusion

Cho, Youn Sang; An, Yun-Kyu

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Post blast behavior of damaged reinforced concrete slabs strengthened/retroffited with NSM bars

Asad, Juwairia; Khan, Asad-Ur-Rehman; Fareed, Shamsoon

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MS21: Bio-based materials for seismic retrofit of existing structures – enhancing structural performance and environmental sustainability

Time: Friday, 28/Aug/2026: 11:00am - 12:30pm · *Location:* BEY E17

Session Chair: Antonio Formisano

Session Chair: Emilia Meglio

Session Chair: Massimiliano Gioffre

Session Chair: Chiara Pepi

Session Chair: Marius Mosoarca

Session Chair: Francesca Roscini

Re-engineering traditional binders: CO₂-driven transformation of nano-enhanced lime mortars

Shahpari, Mehran; Gioffre, Massimiliano

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Mechanical response of masonry walls strengthened by hybrid natural textile reinforced mortar

Paolillo, Bruno¹; do Nascimento Farias, Lidianne²; Pepe, Marco¹; Martinelli, Enzo¹; Toedo Filho, Romildo Dias²

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Diagonal compression tests on masonry walls strengthened with natural TRM: scale effects and retrofitting efficiency

Stochino, Flavio¹; Majumder, Arnab¹; Valdes, Monica¹; Concu, Giovanna¹; Pepe, Marco²; Martinelli, Enzo²

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Durability of jute fiber-reinforced mortars in masonry panels under natural weathering

Farias, Lidianne do Nascimento¹; Paolillo, Bruno^{1,2}; Lima, Paulo Roberto Lopes^{1,3}; Pepe, Marco²; Toledo Filho, Romildo Dias¹

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Performance-based seismic retrofit of RC buildings using self-centering rocking frames

Mottola, Salvatore; Ferraioli, Massimiliano; Pecorari, Osvaldo

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Seismic resilience assessment of buildings using a fuzzy set approach

Rezaei Ranjbar, Parvane; Ferraioli, Massimiliano; Mottola, Salvatore

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MS24-1: Non-destructive testing and monitoring of timber structures

Time: Friday, 28/Aug/2026: 11:00am - 12:30pm · Location: POT 51

Session Chair: Cristoforo Demartino

Session Chair: Michele Mirra

Session Chair: Vittoria Borghese

Session Chair: Angelo Aloisio

Session Chair: Martina Sciomenta

Session Chair: Antonio Sandoli

Knowledge gaps and fire behavior of deadwood

Stochino, Flavio¹; Zucca, Marco¹; Borghese, Vittoria²; Demartino, Cristoforo³

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Structural assessment and service life modeling of historic timber foundations in Amsterdam

Mirra, Michele¹; Pagella, Giorgio²; Ravenshorst, Geert²; Gard, Wolfgang²; van de Kuilen, Jan-Willem^{2,3}

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Integrated seismic assessment of a 19th century timber gate structure in Japan

Xu, Chenpeng; Fujita, Kaori; Toyoda, Takahiro; Seike, Tsuyoshi

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Non-destructive assessment of secondary and virgin timber

Vonk, Niels; Borghese, Vittoria; Lontra, Bernardo; Niederwestberg, Jan

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Non-destructive testing of thermal-density properties in chestnut wood

Santoro, Luca¹; Borghese, Vittoria²; Tromba, Ludovica¹; Dongdong, Chen³; Sesana, Raffaella¹; Vonk, Niels²

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Gamma irradiation of timber: safety and mechanical effects

Aloisio, Angelo¹; Wang, Yue²; Scifo, Jessica³; Carcione, Rocco³; Cemmi, Alessia³; Niederwestberg, Jan⁴; Borghese, Vittoria⁴; D'Orsi, Beatrice³

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MS30-1: Video-based and imaging techniques for structural monitoring

Time: Friday, 28/Aug/2026: 11:00am - 12:30pm · Location: BEY 138

Session Chair: Ivan Roselli

Session Chair: Stefano De Santis

Session Chair: Marialuigia Sangirardi

Session Chair: Alessandro Zona

Analysis of algorithms for real-time dynamic structural monitoring through computer-vision

Allegrezza, Francesco¹; Micozzi, Fabio¹; Morici, Michele²; Zona, Alessandro²; Dall'Asta, Andrea^{1,3}

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Internal and external cameras for vision-based monitoring of buildings during shake-table tests

Gioiella, Laura¹; Micozzi, Fabio¹; McBain, Morgan²; Morici, Michele¹; Zona, Alessandro¹; Dall'Asta, Andrea³; Simpson, Barbara G.²; Barbosa, Andre R.⁴

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Modal identification by phase-based motion magnification and comparison with classical methods

Caione, Giovanni; Liberatore, Domenico

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Insights into the dynamic behaviour of an elevated water tank from computer vision-based SHM

Sangirardi, Marialuigia¹; De Santis, Stefano²; De Felice, Gianmarco²

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Structural health monitoring of civil infrastructure with neuromorphic cameras

Cazzato, Dario¹; Vaglica, Giovanni²; Bono, Flavio¹

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Using motion capture and DIC for the monitoring of masonry structures under testing

Léonard, Suzanne¹; Archez, Julien¹; Cumunel, Gwendal¹; Terrade, Benjamin²; Colas, Anne-Sophie³; Garnier, Denis¹

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MS32: Crowdsourced and indirect approaches to structural health monitoring

Time: Friday, 28/Aug/2026: 11:00am - 12:30pm · Location: BEY 117

Session Chair: Maria Pina Limongelli

Session Chair: Thomas Matarazzo

Session Chair: Zhenkun Li

Session Chair: Chul-Woo Kim

Mobile crowdsensing for structural health monitoring: field validation

Rezvani Alile, Mohsen; Giordano, Pier Francesco; Limongelli, Maria Pina

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A hybrid drive-by framework towards integrated bridge health monitoring

Irawan, Joshua; Kim, Chul-Woo

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Fleet monitoring of bridges using drive-by operational deflection shapes

Feng, Kun¹; Fayyad, Tahreer²; Taylor, Su³; Li, Zhenkun⁴

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Pavement settlement identification from vehicle vibrations

Yanarom, Pattharaphong; Irawan, Joshua; Kim, Chul-Woo

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A crowdsensing-based approach for footbridge frequency identification using pedestrian response

Li, Zhenkun¹; Ozer, Ekin^{2,3}; Ereiz, Suzana¹; Malekjafarian, Abdollah^{2,4}; Limongelli, Maria Pina¹

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Self-sensing in smart structures through mineral-impregnated carbon fiber reinforcements

Shang, Yuchen¹; Nagula, Nihal Goud²; Shanmugam, Suriya Prakash²; Mechtcherine, Viktor¹; Liebscher, Marco¹

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PS1: Structural health monitoring and damage detection

Time: Friday, 28/Aug/2026: 11:00am - 12:30pm · Location: BEY 127

Session Chair: Pavel Ryjáček

AI-driven data analysis of monitoring data in natural language

Tutschku, Morris; Burtscher, Stefan; Huber, Peter

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Wire break detection in prestressed concrete bridges: a comparison of broadband accelerometers and ultrasonic transducers for acoustic emission monitoring

Lange, Alexander¹; Verardo, Tomas¹; Schaller, Melanie¹; Timmermann, Tim²; Bartels, Jan-Hauke²; Tomann, Christoph²; Petersen, Lasse²; Ostermann, Jörn¹

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Millimetre GNSS monitoring of technical objects

Stempfhuber, Werner¹; Kowalewski, Dirk²; Kickler, Jens¹; Richter, Bertram³; Marx, Steffen³

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Applications for maritime monitoring using distributed acoustic sensing (DAS) – opportunities and limitations

Weihnacht, Bianca; Kühmstedt, Mario; Augustin, Jörn; Neubeck, Robert; Tautz, Lili; Kruska, Carsten

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Crack and reinforcement analysis of a full-scale concrete reinforced beam using CT image data

Grzesiak, Szymon¹; de Sousa, Christoph¹; Grzyb, Krzysztof²; Pahn, Matthias¹

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Strain-based masonry damage detection using neural networks: a numerical study

Eva, Alina Elena; Meoni, Andrea; Venanzi, Ilaria; Ubertini, Filippo

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PS3: Advanced cementitious and composite materials

Time: Friday, 28/Aug/2026: 11:00am - 12:30pm · Location: BEY 245

Session Chair: Silke Scheerer

Effects of chemical admixtures on self-sensing cementitious composites: a review

B.L.P. e Silva, João; Wang, Chao; Das, Oisik; Sas, Gabriel; Gonzalez-Libreros, Jaime

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Bicomponent PP fibers with chemical surface functionalization for enhanced bonding in cementitious composites

Hübner, Julia¹; Smolka, Norbert¹; Mechtcherine, Viktor^{2,3}; Scheffler, Christina^{1,2,3}

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Investigation of bio-inspired layered interphases in carbon fiber-reinforced concrete using μ -CT

Utech, Toni¹; Neef, Tobias^{2,4}; Liebold, Frank³; Mechtcherine, Viktor^{2,4}; Scheffler, Christina^{1,4}

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Analysis of concrete penetration into microstructured impregnation of carbon textiles

Flechsig, Lissy¹; Liebold, Frank²; Reißig, Silvia^{3,4}; Mechtcherine, Viktor^{3,4}; Scheffler, Christina^{1,3,4}

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Machine learning-based prediction of compressive strength in 3D concrete printing: a multi-layer perceptron approach

Radwan, Ameer; Nguyen, Hoang; Rezazadeh, Mohammadali; Ramezansafat, Honeyeh

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Designing carbon-reinforced concrete structures using enhanced digital methods including building information modelling and research information modelling

Vakaliuk, Iurii¹; Sinner, Johann¹; Sandmann, David¹; Menzel, Karsten²; Marx, Steffen¹; Beckmann, Birgit¹

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PS5: Structural strengthening, retrofit and structural resilience

Time: Friday, 28/Aug/2026: 11:00am - 12:30pm · Location: POT 112

The impact of macro-synthetic and micro steel fibers on reinforced concrete beam behavior

DEBBAKH, Saïd¹; ARIBI, Chouaib¹; BAROUR, Sabiha²; khitem HANI, Houda²; FARES, Fathia²

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Strengthening methods for axially-loaded reinforced concrete columns against impact

Taheri, Ghazaleh¹; Hu, Chentaoya²; Schubert, Thomas¹; Unger, Nicholas¹; Máca, Petr³; Mechtcherine, Viktor²; Beckmann, Birgit¹; Scheerer, Silke¹

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Seismic retrofit strategy based on self-centering rocking frames

Rezaei Ranjbar, Parvane; Pecorari, Osvaldo; Ferraioli, Massimiliano; Mottola, Salvatore

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Mitigating progressive collapse in a steel–RC hospital via outrigger-belt truss retrofit

Ferraioli, Massimiliano; Ahmad, Tahir; Lavino, Angelo; Mandara, Alberto

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Determination of the stiffness of GFRP under axial compression using digital image correlation (DIC)

Basters, René; Grzesiak, Szymon; de Sousa, Christoph; Pahn, Matthias

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Progressive collapse vulnerability of steel storage racks: insights from testing and FEM analysis

Ahmad, Tahir¹; Ferraioli, Massimiliano¹; Pastore, Marina²; Nastri, Elide²

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MS01: Structural health monitoring and assessment of aging railway infrastructures

Time: Friday, 28/Aug/2026: 2:00pm - 4:00pm · Location: BEY E40
Session Chair: Chao Wang
Session Chair: Zhanchong Shi
Session Chair: Jaime Gonzalez-Libreros
Session Chair: Gabriel Sas

Methods of indirect monitoring of deflection, load, and stresses on bridges

Ryjáček, Pavel¹; Šach, Matěj¹; Kolínský, Vojtěch¹; Zralá, Daniela¹; Vích, Daniel²; Klokočník, Petr²

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Operational applications of continuous strain monitoring on prestressed beam-girder bridges

Cartiaux, François-Baptiste

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From data to insight: anomaly detection with 6D monitoring for bridge bearings

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Pressure Distribution at the Ballast–Concrete Interface in a Full Scale RC Trough Bridge

Gonzalez-Libreros, Jaime¹; Sarmiento, Silvia¹; Wang, Chao¹; Elfgren, Lennart¹; Höjsten, Tommy²; Enoksson, Ola²; Andersson, Lars-Olof²; Sas, Gabriel¹

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Condition assessment of steel bridges – experimental and numerical procedures

Ramaswamy, Ananth

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Fatigue assessment of railway noise barriers based on field monitoring, ML-driven stress prediction and numerical modeling

Liu, Dongyun; Wang, Chao; Gonzalez-Libreros, Jaime; Elfgren, Lennart; Sas, Gabriel

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Network-Level Uncertainty-Aware Deterioration Onset Model for Concrete Railway Bridges on Sweden's Iron Ore Line

Coric, Vedad¹; Wang, Chao¹; Gonzalez-Libreros, Jaime¹; Sas, Gabriel¹; Enoksson, Ola²; Höjsten, Tommy²; Andersson, Lars-Olof²

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Self-sensing functionalisation of UHPC

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MS07-2: Distributed fiber optic strain sensing for bridge structural health monitoring

Time: Friday, 28/Aug/2026: 2:00pm - 4:00pm · Location: POT 151
Session Chair: Bertram Richter
Session Chair: Steffen Marx

Quality indicators for monitoring data: adaption for distributed fiber optic strain sensing

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Prestressing wire damage detection with surface distributed fiber optic strain sensing

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Automated crack detection and strain mapping of reinforced concrete structures using 2D-FOS

Becks, Henrik^{1,2}; Wellmann, Till¹; Linden, Christian¹; Classen, Martin^{1,2}

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Characterization of FRP bar bond behavior on an RC tie using DIC and DFOS

Wendler, Tobias; Ruppert, Felix; Plößer, Maurice; Kaiser, Maximilian; de Sousa, Christoph; Grzesiak, Szymon; Pahn, Matthias
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Smart tendon – Monitoring the post-tensioning process with distributed fiber optic sensors

Speck, Kerstin; Richter, Bertram; Ponce Hernandez, Raúl Armando; Marx, Steffen

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Fresh-in-fresh fiber optic sensor embedding for monitoring yarn behavior in carbon-fiber-reinforced concrete: a feasibility study

Ragab, Aya¹; Janiak, Till²; Zierul, Lore³; Heins, Kira⁴; Beckmann, Birgit³; Adam, Viviane¹

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φ-OTDR for vehicle detection and traffic monitoring

Rossi, Leonardo¹; Cheng, Lun-Kai²; de Jong, Wim²; Scherino, Lorenzo²; Jansen, Rob²; Bolognini, Gabriele¹

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Fiber optic shape sensing in the presence of core breakage

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MS11: Monitoring of corrosion relevant parameters

Time: Friday, 28/Aug/2026: 2:00pm - 4:00pm · Location: BEY E17

Session Chair: Rebecca Achenbach

Session Chair: Sylvia Keßler

Session Chair: Jörg Harnisch

Novel monitoring solution of all corrosion-relevant parameters for predictive maintenance

Segui Femenias, Yurena; van Ede, Meeke; Honegger, Géorgia

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Influence of cathodic polarization on the chloride threshold for carbon steel in concrete

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Electrochemical characteristics of reinforcement steel in contact with novel binder types

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Geometric effects in Wenner resistivity measurements: methods to determine form factors for concrete specimens

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Corrosion monitoring to verify the applicability of the W-CL repair principle

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Chloride ion ingress monitoring via self-sensing CNT-coated fiber-reinforced concretes

Bashiri Rezaie, Ali¹; Liebscher, Marco^{1,2}; Mohammadi, Mahsa¹; Shaikh Ahmad, Mahmoud¹; Mechtcherine, Viktor^{1,2}

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NDT for the in situ assessment of external tendons

Heldt, Kilian¹; Hornbostel, Karla^{2,3}; Osmolska, Magdalena³; Dethof, Fabian¹; Takriti, Ahmad¹; Alexander, Christopher⁴;

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Condition monitoring and sensor concepts for assessing the technical service life of structural components in interim storage facilities for high-level radioactive waste

Leusmann, Thorsten¹; von Wehren, Stephan¹; Matschei, Thomas¹; Sperbeck, Silvio²; Oeff, Julius³; Niederleithinger, Ernst³

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MS15: Data-driven monitoring, modelling and assessment strategies for resilient infrastructure

Time: Friday, 28/Aug/2026: 2:00pm - 4:00pm · Location: BEY 117

Session Chair: Mohammad Shamim Miah

Session Chair: Subhra Majhi

Session Chair: Humera Mughal

Parameter effects in stochastic subspace identification: a quality assurance framework

Nichani, Kapil¹; Uhlig, Steffen²; Colson, Bertrand¹; Hettwer, Karina¹; Beering, Carina²; Knoth, Sven²

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Time-series models performance comparison: feed-forward neural network and autoregressive

Miah, Mohammad Shamim; Lienhart, Werner

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A framework for load estimation for offshore wind turbines based on Kalman filtering and finite-element models

Jensen, Anders Malund Dammark; Thing, Mathias Vedel; Abbiati, Giuseppe

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Predicting crest displacement at Ridracoli dam using non-co-located temperature data

Ullah, Asad¹; Pereira, Sérgio²; Cavalagli, Nicola¹; Salciarini, Diana¹; Manciola, Piergiorgio¹; Buffi, Giulia³; Ubertini, Filippo¹

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Ontology-based modeling of crack width evolution in concrete components

Song, Xiaoli¹; Peng, Mengyan¹; Marx, Steffen^{1,2}; Kang, Chongjie^{1,2}

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Assessing ballast load distribution effects on axle detection in railway B-WIM

Barbely, László; Joó, Attila László

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Enhanced ultrasonic imaging of curved concrete structures using cascading filters

Majhi, Subhra¹; Acevedo Osma, Juan²; Saberpour, Maryam¹; Mukherjee, Abhijit¹

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Functionalized carbon fiber textile reinforcements with fiber-based strain sensing

Le Xuan, Hung^{1,2}; Happel, Anna¹; Penzel, Paul^{1,2}; Cherif, Chokri^{1,2}

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MS17: Distributed fiber optical sensing (DFOS) in structural engineering research

Time: Friday, 28/Aug/2026: 2:00pm - 4:00pm · Location: BEY 127

Session Chair: Yasmin Lemcherreq

Session Chair: Christoph Czaderski

Benefits and challenges of DFOS in reinforced, prestressed and 3D-printed concrete research

Howiacki, Tomasz¹; Badura, Kamil²; Sieńko, Rafał¹; Bednarski, Łukasz³

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Fiber-optic monitoring of shrinkage eigenstrains and gravity behavior in concrete

Esfandiari, Soheil; Raeisi Oskoue, Seyedmorteza; Scholzen, Alexander; Chudoba, Rostislav

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Experimental study of concrete tension members reinforced with BFRP-bars with integrated DFOS

Lemcherreq, Yasmin; Czaderski, Christoph

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Experimental investigation of FRP-concrete bond behavior by global and DFOS-based local analysis

Kaiser, Maximilian; Wendler, Tobias; Grzesiak, Szymon; de Sousa, Christoph; Pahn, Matthias

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Information gain of distributed fiber optic sensors for concrete bridge monitoring

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TRM strengthening of masonry panels with integrated optical fiber monitoring: a preliminary study

Rampini, Marco Carlo¹; Sellitto, Eduardo¹; Chiadini, Francesco²; Ferro, Matteo³; Pepe, Marco¹; Sommella, Paolo²; Martinelli, Enzo¹

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Bond stresses in RC tension chords with multiple rebars – influence of concrete cover

Sørensen, Jesper Harrild; Hoang, Linh Cao

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Preliminary study on crack monitoring in FRCM strengthening equipped with DFOS

Rampini, Marco Carlo¹; Saidi, Mohamed²; Cazzulani, Gabriele³; Gabor, Aron⁴

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MS22-2: Advances in fiber optic sensing solutions for infrastructure, geotechnics, and earth sciences

Time: Friday, 28/Aug/2026: 2:00pm - 4:00pm · Location: BEY 245

Session Chair: Massimo Facchini

Session Chair: Luca Schenato

Session Chair: Lorenzo Brezzi

EDF's feedback on the operation of fibre optic monitoring systems for hydraulic structures

Courivaud, Jean-Robert¹; Buchoud, Edouard¹; Guidoux, Cyril²; Hénault, Jean-Marie¹

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Distributed fiber-optic temperature monitoring and PCA–ICA analysis for near-real-time seepage detection in river levees

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DOFS for an integrated landslide monitoring setup during tunnel excavation

Damiano, Emilia¹; Alfieri, Mara²; de Cristofaro, Martina¹; Ferlisi, Settimio^{2,3}; Guida, Domenico^{2,3}; Moliterno, Erika¹; Valiante, Mario²; Olivares, Lucio¹

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Experimental investigation of debris flow monitoring using DAS in a large-scale physical model

Zampato, Silvia¹; Poursalimi, Nora²; Yujiao, Li^{1,4}; Sarno, Luca²; Tecca, Pia Rosella³; Mandaglio, Maria Clorinda²; Marcato, Gianluca³; Guarnaccia, Claudio²; Rossi, Domenico²; Palmieri, Luca¹; Schenato, Luca¹; Viccione, Giacomo²; Pasuto, Alessandro³; Galtarossa, Andrea¹

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Integrating economic and innovation aspects for improved landslide risk mitigation

Damiano, Emilia¹; De Cristofaro, Martina^{1,3}; Netti, Nadia^{2,3}; Olivares, Lucio^{1,3}; Olivares, Mattia³

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Distributed fiber-optic sensing and 3D laser scanning in an underground mine towards development of a digital twin

Martin, Michael Dieter¹; Nöther, Nils²; Farys, Erik³; Facchini, Massimo²; Paffenholz, Jens-André¹

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From DFOS measurements to engineering insights – the role of custom software solutions

Świdorski, Mateusz¹; Dudziński, Patryk¹; Bocheńska, Marta^{1,2}; Gołdyn, Michał¹; Zdanowicz, Katarzyna¹

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Sensors for detecting stress in steel reinforcements of infrastructure

Cikalova, Ulana¹; Bendjus, Beatrice¹; Mosig, Oliver²

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MS24-2: Non-destructive testing and monitoring of timber structures

Time: Friday, 28/Aug/2026: 2:00pm - 4:00pm · Location: POT 51

Session Chair: Cristoforo Demartino

Session Chair: Michele Mirra

Session Chair: Vittoria Borghese

Session Chair: Angelo Aloisio

Session Chair: Martina Sciomenta

Session Chair: Antonio Sandoli

Pre-grading of structural timber boards by means of non-destructive dynamic testing

Concu, Giovanna¹; Giaccu, Gian Felice²; Meloni, Daniel¹; Stochino, Flavio¹; Valdes, Monica¹; Zucca, Marco¹

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Non-destructive field tests and FEA modeling of a timber wharf building in Norway from 1767

Tulebekova, Saule^{1,2}; Ostapska, Katarzyna¹; Conta, Simone¹

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Structural assessment of a decade-old severely degraded glulam roof

Mirra, Michele¹; Sciomenta, Martina²; Rosone, Gloria²; Ranalli, Danilo²

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Non-destructive evaluation of the elastic properties of CLT floors by vibration techniques

Opazo-Vega, Alexander^{1,2}; Araneda, Marcelo¹; Jara-Cisterna, Alan¹

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Bayesian vibration-based identification of CLT mechanical properties and connection stiffness

Jara-Cisterna, Alan^{1,2,3}; Benedetti, Franco^{2,3}; Málaga-Chuquitaype, Christian⁴; Opazo-Vega, Alexander^{2,3}

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Microwave measurements – methods for non-destructive condition assessment of timber structures

Loeffler, Julian¹; Arndt, Ralf¹; Bonitz, Frank²

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Climate monitoring of roof structures with punched metal plate fasteners

Wilden, Vera¹; Scherer, Jochen²; Hoffmeister, Benno¹

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Monitoring of curved long-span timber structures through satellite interferometry

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MS30-2: Video-based and imaging techniques for structural monitoring

Time: Friday, 28/Aug/2026: 2:00pm - 4:00pm · Location: BEY 138

Session Chair: Ivan Roselli

Session Chair: Stefano De Santis

Session Chair: Marialuigia Sangirardi

Session Chair: Alessandro Zona

Using in-situ computer tomography for crack development inside carbon-reinforced hollow core beams – comparison with DIC

Zierul, Lore¹; Grzesiak, Szymon²; Liebold, Frank³; Ragab, Aya⁴; Pahn, Matthias²; Maas, Hans-Gerd³; Adam, Viviane⁴; Beckmann, Birgit¹

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Sensitivity of DIC-based tensile modulus of elasticity evaluation in ultra-high-performance concrete at low strain levels

Plößler, Maurice; Grzesiak, Szymon; de Sousa, Christoph; Pahn, Matthias

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AI-based RC infilled frame cracks analysis by 3D motion capture displacements in shake table tests

Roselli, Ivan¹; Palumbo, Domenico¹; Ormando, Chiara¹; Colucci, Alessandro¹; de Felice, Gianmarco²; Nikolic, Milena²; De Santis, Stefano²; Iovinella, Ivano¹; Marzo, Anna¹; Saitta, Fernando¹; Tripepi, Concetta¹

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Multitemporal and multimodal SHM for targeted tunnel inspection

Pfeiffer, Jan^{1,2}; Mett, Michael¹; Steiner, Peter¹; Eder, Simon¹; Kontrus, Heiner¹; Paar, Gerhard³; Bauer, Arnold³; Vierhub-Lorenz, Valentin⁴; Haslgrübler, Michael⁵; Grunicke, Urs⁶

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Integrated 360-degree imaging and digital forms: complementing dam visual inspections

Conde Silva, João; Serra, Carlos; Fernandes, Hugo; Ferreira, Diogo

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Distance-based fire risk classification on construction sites with Unreal Engine simulation validation

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Multi-view RGB-to-3D distance reasoning for construction site safety

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