

Conference Agenda

WED 26 Aug	THU 27 Aug	FRI 28 Aug
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Daily Overview

Date: Wednesday, 26/Aug/2026

9:00am - 10:30am	Opening session Location: POT 81 Session Chair: Yvonne Ciupack Session Chair: Steffen Marx
10:30am - 11:00am	Coffee break Location: Exhibition and Catering Rooms: BEY E39, E26, 126
11:00am - 12:30pm	KS 01: Keynote lectures Location: POT 81 Session Chair: Steffen Marx Speakers: Zahra Sharif Khodaei and Mark F. Green
12:30pm - 2:00pm	Lunch Break Location: Neue Mensa
1:15pm - 1:45pm	Supplementary lecture Location: POT 81 Session Chair: Chongjie Kang Speaker: Gregor Schacht
2:00pm - 4:00pm	MS03-1: Railway track monitoring – an essential basis for the optimization of railway infrastructure Location: BEY 138 Session Chair: Marc Wenner Session Chair: Günther Grunert
	Smart Instrumented Test Track for Advanced Railway Superstructure Evaluation Gschwandl, Timna Jakomijna¹; Gabernig, Thomas²; Prettnner, Lukas¹; Mayer, Thomas³ 1: voestalpine Rail Technology GmbH; 2: TU Graz, Institute of Railway Infrastructure Design; 3: voestalpine Railway Systems GmbH; Timna.Gschwandl@voestalpine.com
	Experimental DAS, FBG and DFOS based monitoring of the rail track in high-speed train loading Diugosz, Szymon¹; Sieńko, Rafał²; Bednarski, Łukasz³; Howiacki, Tomasz^{1,2} 1: SHM System, Poland; 2: Faculty of Civil Engineering, Cracow University of Technology, Poland; 3: Faculty of Mechanical Engineering and Robotics, AGH University of Science and Technology in Kraków, Poland; sd@shmsystem.pl
	Piezoresistive Sensors for Smart Monitoring Applications in Railway Infrastructure Grohs, Gernot; Marangon, Francesco; Pospischil, Ferdinand Graz University of Technology, Institute of Railway Infrastructure Design, Inffeldgasse 25/F/I, Graz 8010, Austria; grohs@tugraz.at
	Mission Profiling of Railway Bridges using Low-Power Smart MEMS Sensors Liebermann, Joris; Bachmann, Hannes; Lehmann, Martin; Beyer, Volkhard Fraunhofer IIS, Germany; joris.liebermann@iis.fraunhofer.de
	Continuous Track Monitoring (CTM) for condition-based maintenance of Railway Bridges Grunert, Günther¹; Rupp, Maximilian M.²; Wolter, Klaus-Ulrich³ 1: DB InfraGO AG, Germany; 2: Technical University Darmstadt, Germany; 3: DB Systemtechnik GmbH, Germany; guenther.grunert@deutschebahn.com
	Track Geometry Prediction Method - Development and Practice at DBInfraGO Jovanovic, Mirjana; Feng, Joseph DB InfraGO, Germany; mirjana.jovanovic@deutschebahn.com

2:00pm - 4:00pm

MS04: Load testing of bridgesLocation: **BEY 117**Session Chair: **Gregor Schacht**Session Chair: **Oliver Mosig**Session Chair: **Eva Lantsoght****Advancing SHM of Bridges: The Deformation and Strain Area Difference Methods****Čamo, Tarik¹; Waldmann, Danièle²**

1: TA-ing Ingenieurbüro Čamo, Germany; 2: Technische Universität Darmstadt, Germany;

tarik.camo@ta-ing.com**Integration of IoT-Based SHM in Bridge Load Testing: Field Applications in Italy****Ferrara, Salvatore; Longo, Monica; Alovise, Isabella; La Mazza, Dario; Darò, Paola; Mancini, Giuseppe**Sacertis Ingegneria S.r.l., Italy; salvatore.ferrara@sacertis.com**Static distributed fiber optic measurements on prestressed concrete bridges****Wosniok, Aleksander; Karapanagiotis, Christos; Ettaouaje, Omar**Bundesanstalt für Materialforschung und -prüfung (BAM), Germany; aleksander.wosniok@bam.de**Assessment of applied tension on high strength steels by X-ray diffraction (XRD) and magnetic Barkhausen (MBN)****Pisani, Luigi¹; Ventura, Giulio²; Corrado, Mauro²; Torboli, Alessandro¹**1: GNR Analytical Instruments Srl, Italy; 2: Politecnico di Torino, Department of Structural, Geotechnical and Building Engineering; gnrsales@gnr.it**Residual Prestressing Evaluation in HISCC-Prone Bridges: Full-Scale Loading at Lingelbach****Bujotzek, Lukas; Moriche-Quesada, Sergio; Rudolf, Martin**Ingenieurgruppe Bauen PartG mbB, Germany; lukas.bujotzek@ingenieurgruppe-bauen.de**Load test on the Elbe bridge Bad Schandau****Mosig, Oliver¹; Fritsch, Christina¹; Müller, Steffen²; Gruner, Andreas²; Schacht, Gregor¹; Marx, Steffen³**1: MKP GmbH, Germany; 2: Landesamt für Straßenbau und Verkehr, Germany; 3: TU Dresden, Germany; oliver.mosig@marxkrontal.com**Hybrid Monitoring Approach for Structural Assessment of the Nibelungen Bridge (Worms)****Herbers, Max¹; Monsberger, Christoph Martin²; Buchmayer, Fabian³; Voigt, Chris¹; Lüttmann, Andre³; Lehmen, Judith³; Schneider, Leon³; Haaß, Maximilian⁴; Kriegeskorte, Darius⁴**1: MKP GmbH, Germany; 2: ACI Monitoring GmbH, Austria; 3: DMT GmbH & Co. KG, Germany; 4: LBM Landesbetrieb Mobilität Worms, Germany; christoph.monsberger@aci-monitoring.at

2:00pm - 4:00pm

MS05-1: Research on shape memory alloys in GermanyLocation: **BEY E40**Session Chair: **Elyas Ghafoori**Session Chair: **Thomas Niendorf**Session Chair: **Hans Jürgen Maier**Session Chair: **Anja Weidner**Session Chair: **Philipp Krooss****Recent research and applications of Fe-SMA in Germany and Europe****Ghafoori, Elyas; Hilscher, Marlon; Jübner, Paul**Leibniz University of Hannover, Germany; ghafoori@stahl.uni-hannover.de**Effect of pre-strain on recovery stress and its stability in Fe-Mn-Si-Cr-Ni-VC shape memory alloys****Bauer, André¹; Hilscher, Marlon²; Vollmer, Malte¹; Ghafoori, Elyas²; Niendorf, Thomas¹**1: University of Kassel, Institute of Materials Engineering, 34125 Kassel, Germany; 2: Leibniz University Hannover, Institute for Steel Constructions, 30167 Hannover, Germany; bauer@uni-kassel.de**Influence of recovery stress level and loading amplitude on the fatigue behavior in iron-based shape memory alloys****Hilscher, Marlon^{1,3}; Bauer, André²; Niendorf, Thomas²; Ghafoori, Elyas¹**1: Leibniz University Hannover, Institute for Steel Construction, 30167 Hannover, Germany; 2: University of Kassel, Institute of Materials Engineering, 34125 Kassel, Germany; 3: 3S Structural Solutions GmbH, 30173 Hannover, Germany; hilscher@stahl.uni-hannover.de

	4D-printed Fe-based shape memory alloy architectures with enhanced recoverability Mohri, Maryam¹; Heydarinouri, Hossein¹; Asadollahi, Navid²; Vaseghanianfard, Ali³; Niliahmadaadi, Mahmoud³ 1: Empa, Swiss Federal Laboratories for Materials Science and Technology, Dübendorf 8600, Switzerland, Switzerland; 2: University of Warwick, England; 3: University of Tehran, Iran; Navid.Asadollahi@warwick.ac.uk Self-locking Fe-SMA couplers for structural application: barriers to adoption and a path forward Jafarabadi, Ali; Heydarinouri, Hossein Empa, Switzerland; hossein.heydarinouri@empa.ch fastening in inaccessible spaces using shape memory alloys Thüsing, Kai; Drossel, Welf-Guntram Fraunhofer-Institut für Werkzeugmaschinen und Umformtechnik IWU, Germany; kai.thuesing@iwu.fraunhofer.de
2:00pm - 4:00pm	MS08-1: Hybrid construction and strengthening with wire arc additive manufacturing Location: BEY E17 Session Chair: Yvonne Ciupack Session Chair: Leroy Gardner Session Chair: Elyas Ghafoori Session Chair: Vittoria Laghi Session Chair: Vlad-Alexandru Silvestru Integrating WAAM into an adaptive and systematic digital workflow applicable to steel components and their rehabilitation Waldschmitt, Benedikt; Grebner, Philipp; Ciupack, Yvonne; Lange, Jörg Technical University of Darmstadt, Germany; waldschmitt@stahlbau.tu-darmstadt.de Strengthening of structural steel elements using additive manufacturing Gardner, Leroy; Yang, Jiachi; Kyvelou, Pinelopi Imperial College London, United Kingdom; leroy.gardner@imperial.ac.uk Feasibility study on the rehabilitation of fatigue-damaged steel plates using wire arc additive manufacturing Gilliar-Schönenberger, Lionel Arthur¹; Silvestru, Vlad-Alexandru¹; Dahaghin, Hamid²; Heydarinouri, Hossein³ 1: ETH Zurich, Swiss Federal Institute of Technology, Stefano-Franscini-Platz 5, 8093 Zurich, Switzerland; 2: Department of Civil and Environmental Engineering, University of Waterloo, 200 University Avenue West, ON, Canada N2L 3G1; 3: Empa, Swiss Federal Laboratories for Materials Science and Technology, Überlandstrasse 129, 8600 Dübendorf, Switzerland; lionel.gilliar@ibk.baug.ethz.ch DED-arc strengthening of steel beams: design, manufacturing and mechanical performance Ledderose, Lukas¹; Muggenburg, Marc¹; Altobelli, Martin Gabriel²; Hoefer, Kevin²; Köhler, Markus²; Kugler, Nina³; Unglaub, Julian¹; Radlbeck, Christina³; Hensel, Jonas²; Kloft, Harald¹ 1: TU Braunschweig, Germany; 2: Chemnitz University of Technology, Germany; 3: TU Munich, Germany; l.ledderose@tu-bs.de Strengthening end-of-life steel sections for reuse through wire arc additive manufacturing Silvestru, Vlad-Alexandru ETH Zürich, Institute of Structural Engineering, Switzerland; silvestru@ibk.baug.ethz.ch Investigation on the load-bearing capacity of thin sheet steel façades reinforced using WAAM Grebner, Philipp; Waldschmitt, Benedikt; Ciupack, Yvonne; Rädcl, Felicitas; Lange, Jörg Technische Universität Darmstadt, Germany; waldschmitt@stahlbau.tu-darmstadt.de Wire arc additive manufacturing to the rescue of historic structures Hadjipantelis, Nicolas¹; Georgiou, Andreas¹; Ioannou, Ioannis¹; Kontovourkis, Odysseas²; Mavros, Marios¹ 1: Department of Civil and Environmental Engineering, University of Cyprus; 2: Department of Architecture, University of Cyprus; hadjipantelis.nicolas@ucy.ac.cy A digital workflow for optimized repair of corroded steel bridges via cold spray

	deposition Tzortzinis, Georgios¹; Abhyankar, Kaushik¹; Christoff, Bruno¹; Schagen, Brian²; Hart, A. John³; Gerasimidis, Simos²; Gude, Maik¹ 1: TUD Dresden University of Technology; 2: University of Massachusetts Amherst; 3: Massachusetts Institute of Technology; georgios.tzortzinis@tu-dresden.de
2:00pm - 4:00pm	MS10-1: Advances and applications of vibration-based structural health monitoring Location: POT 112 Session Chair: Alvaro Cunha Session Chair: Carlos Moutinho Session Chair: Sergio Pereira Innovations and practical experiences in monitoring cable forces in cable stayed bridges Vollmering, Max; Bieber, Simon; Brand, Werner DYWIDAG-Systems International GmbH, Germany; max.vollmering@dywidag.com Calculation of normal forces in hangers of tied-arch-bridges based on frequency measurements considering model uncertainty and boundary condition sensitivity Schneider, Lukas; Mols, Felix; Weidner, Philipp; Ummenhofer, Thomas Steel and Lightweight Structures, Karlsruhe Institute of Technology, Germany; lukas.schneider@kit.edu Preliminary dynamic characterization of the Pisa Baptistery (Italy) using ambient vibration testing Caffarri, Caterina¹; Bartolini, Giada²; De Falco, Anna¹; Landi, Filippo¹; Vignali, Laura¹ 1: Department of Civil and Industrial Engineering, University of Pisa, Largo Lucio Lazzarino 1, 56122, Italy; 2: Department of Civil and Environmental Engineering, University of Strathclyde, 75 Montrose Street, Glasgow, G1 1XJ, Scotland; caterina.caffarri@phd.unipi.it Modal-based damage Assessment of an arch dam Rossmannith, Leonie; Stark, Alexander Karlsruhe Institute of Technology, Germany; Leonie.rossmanith@kit.edu Catching the shift: anomaly detection in concrete dams Pereira, Sergio¹; Salvi, Chanalisa¹; Magalhães, Filipe¹; Mata, Juan²; Gomes, Jorge²; Cunha, Alvaro¹ 1: CONSTRUCT – ViBest, Faculty of Engineering of the University of Porto, Rua Dr. Roberto Frias s/n, Porto, Portugal; 2: Concrete Dams Department, National Laboratory for Civil Engineering, Avenida do Brasil, 101, Lisboa, Portugal; acunha@fe.up.pt Vibration-based structural health monitoring of an industrial plant: methodology and findings Balaskas, Georgios; Hoffmeister, Benno; Butenweg, Christoph Rheinisch-Westfälische Technische Hochschule Aachen, Germany; g.balaskas@stb.rwth-aachen.de Self-sensing cementitious composites for SHM: insights from the PRIN 2022 SUCCESS project Dattu Shanker More, Florence More¹; Cassese, Paolino²; Fantasma, Francesca¹; De Felice, Vincenzo¹; Fabbrocino, Giovanni^{1,3}; Rainieri, Carlo² 1: University of Molise, Department of Biosciences and Territory (DiBT), Campobasso, Italy; 2: National Research Council (CNR), Institute for Construction Technologies (ITC) – Secondary Branch of Naples, Italy; 3: National Research Council (CNR), Institute for Construction Technologies (ITC) – Secondary Branch of L'Aquila, Italy; florence.mored@unimol.it Data-driven structural health monitoring under static and dynamic loading Arailopoulos, Alexandros¹; Kardoulis, Andreas¹; Seventekidis, Panagiotis² 1: University of Western Macedonia, Greece; 2: Aristotle University of Thessaloniki, Greece; aarailopoulos@uowm.gr, kardoulisasandreas@gmail.com, pseventekidis@gmail.com
2:00pm - 4:00pm	MS13-1: Intelligent digital methods for extending the service life of structures beyond 100 years Location: POT 51 Session Chair: Chongjie Kang Session Chair: Steffen Marx Information-guided Bayesian modelling for structural health monitoring Bakeer, Tammam¹; Herbers, Max²; Marx, Steffen³ 1: Independent Researcher, 01067 Dresden, Germany; 2: MARX KRONAL PARTNER, 30163 Hannover, Germany; 3: Technische Universität Dresden, Institute of Concrete Structures, 01062

Dresden, Germany; mail@bakeer.de

Temperature-informed autoencoder for structural health monitoring of bridges

Baasch, Benjamin; Degener, Sebastian; Herrmann, Ralf; Baeßler, Matthias

Bundesanstalt für Materialforschung und -prüfung (BAM), Germany; benjamin.baasch@bam.de

Applied structural health monitoring utilizing state projection estimation error (SP2E)

Moeller, Max; Lenzen, Armin

University of Applied Sciences Leipzig, Germany; max.moeller@htwk-leipzig.de

GA-based FE model updating for damage detection: application to the openBridgeLAB

Sprenger, Bjarne; Schnellenbach-Held, Martina

Institute of Structural Concrete / University of Duisburg-Essen, Germany; bjarne.sprenger@uni-due.de

Physics-informed neural networks for inverse modeling of non-uniform bending stiffness in beams

Hendricks, Amelie; Radin, Nils; Klinkel, Sven

Lehrstuhl für Baustatik und Baudynamik, Germany; hendricks@lbb.rwth-aachen.de

Transfer learning for traffic identification in SHM based on visual and vibration data

Herrmann, Ralf; Degener, Sebastian; Baasch, Benjamin; Baeßler, Matthias

Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin, Germany; ralf.herrmann@bam.de

Validation of a cloud-based digital twin for long-term structural health monitoring of the Terfener Inn Bridge

Weissenbach, Nils; Penasa, Massimo

CAEmate Srl., Italy; nils.weissenbach@caemate.com

Multi-sensor equipped load testing on the openBridgeLAB

Walker, Maria; Richter, Bertram; Speck, Kerstin; Kielreiter, Anett; Marx, Steffen

TU Dresden, Institut für Massivbau, Germany; maria.walker1@tu-dresden.de

2:00pm - 4:00pm

MS22-1: Advances in fiber optic sensing solutions for infrastructure, geotechnics, and earth sciences

Location: **BEY 245**

Session Chair: **Massimo Facchini**

Session Chair: **Luca Schenato**

Session Chair: **Lorenzo Brezzi**

Earth structures with embedded fibre optic sensors: from the lab to the field

Bednarski, Łukasz¹; **Sieńko, Rafał**²; **Zuziak, Katarzyna**³; **Howiacki, Tomasz**³

1: Faculty of Mechanical Engineering and Robotics, AGH University of Kraków, Mickiewicza 30, 30-059 Kraków, Poland; 2: Faculty of Civil Engineering, Cracow University of Technology, Warszawska 24, 31-155 Kraków, Poland; 3: SHM System | Nerve-Sensors, Libertów, Jana Pawła II 82A, 30-444 Kraków, Poland; th@shmsystem.pl

Integration of distributed fiber-optic sensing in pile foundations and civil structures

Yannie, Jorge¹; **Nöther, Nils**²; **Facchini, Massimo**²; **Peter, Alheid**³; **Emil, Karlén**³

1: GEN Monitoring, Sweden; 2: fibrisTerre Systems GmbH, Germany; 3: Hercules Grundläggning, Sweden; nils.noether@fibristerre.de

DFOS for pull-out testing of self-drilling passive anchors in port reinforcement works

Brezzi, Lorenzo¹; **Turchetti, Omar**¹; **Ruggeri, Paolo**²; **Fabbian, Nicola**¹; **Senigagliales, Matteo**²; **Alesiani, Pierluigi**²; **Cola, Simonetta**¹

1: University of Padua, ICEA Department, via Ognissanti 39, Padua 35129, Italy; 2: Marche Polytechnic University, SIMAU Department, via Brece Bianche 12, Ancona 60131, Italy; lorenzo.brezzi@unipd.it

Distributed fibre optic monitoring of a repaired concrete tunnel lining at CERN

de Battista, Nicholas¹; **Castle, Ben**²; **Kechavarzi, Cedric**³; **Di Murro, Vanessa**⁴; **Osborne, John Andrew**²

1: Epsimon Ltd., United Kingdom; 2: European Organization for Nuclear Research (CERN), Switzerland; 3: University of Cambridge, United Kingdom; 4: Chemins de Fer Fédéraux (CFF), Switzerland; nicky.debattista@epsimon.com

Fiber optic strain telemetry with mid-range OFDR for viaduct structural monitoring

Yoshimura, Yuichi¹; **Fujiwara, Kotaro**¹; **Taira, Yohei**¹; **Imai, Michio**¹; **Zhang, Chao**²; **Hara, Sakuya**³; **Nakao, Keigo**³; **Ito, Fumihiko**³

1: Kajima technical research institute, Japan; 2: Kogakuin University, Japan; 3: Shimane University, Japan; yoshyuic@kajima.com

Damage localization in the openLAB research bridge using fiber segment interferometry

Rossi, Filippo^{1,2}; Statham, Kristopher²; Richter, Bertram³; Marx, Steffen³; Polak, Peter¹

1: Kistler Instrumente AG, Eulachstrasse 22, 8408 Winterthur, Switzerland; 2: Kistler Fiber Technology Ltd., 68 A/B & F Innovation Drive, Milton Park, Oxfordshire, OX14 4RQ, UK; 3: TUD Dresden University of Technology, Institute of Concrete Structures, 01062 Dresden, Germany; filippo.rossi@kistler.com

Smart road monitoring: fiber optic sensor integration for traffic and structural analysis

Lipus, Martin¹; Ganzer, Merlin¹; Jansen, Dirk²; Ork, Jan²; Liehr, Sascha³

1: FOMON GmbH, Germany; 2: Federal Highway and Transport Research Institute (BAST), Germany; 3: DiGOS Potsdam GmbH, Germany; lipus@fomon.de

Characterizing footstep-induced strain in pavement fibers with distributed acoustic sensing

Saw, Jaewon¹; Jasiak, Maksymilian²; Yamaguchi, Marina³; Wu, Yan²; Dong, Chuao²; Liu, Jingxiao²; Soga, Kenichi²

1: Exponent, Inc., USA; 2: University of California, Berkeley, USA; 3: Nippon Koei Co., Ltd., Japan; jasiak@berkeley.edu

2:00pm - 4:00pm

MS25: Advancements in risk, reliability, and resilience assessment of existing structures

Location: **BEY 137**

Session Chair: **Edward Steeves**

Session Chair: **Abdalla Alhashmi**

Fragility assessment of existing reinforced concrete buildings under ground-settlement and seismic action

Miano, Andrea¹; Del Gaudio, Carlo²; Cantisani, Gaetano²; Verderame, Gerardo Mario²; Prota, Andrea²

1: Pegaso University, Italy; 2: University of Naples Federico II, Italy; ANDREA.MIANO@UNIEGASO.IT

Fast seismic risk assessment of highway bridges using artificial neural networks

Principi, Lorenzo¹; Morici, Michele¹; Leggieri, Valeria¹; Zona, Alessandro¹; Dall'Asta, Andrea²

1: School of Architecture and Design, University of Camerino, Viale della Rimembranza 3, 63100 Ascoli Piceno, Italy; 2: School of Science and Technology, University of Camerino, Via Gentile III da Varano 7, 62032 Camerino, Italy; lorenzo.principi@unicam.it

SEISMic risk and URBan resilience in historical environments: the case study of Molfetta, Italy

Caporizzo, Claudia; Sciotti, Albina; Belliazzi, Stefano; Francavilla, Antonella Bianca; Mazzeo, Giuseppe; Mecca, Ippolita; Ramaglia, Giancarlo; Todisco, Paolo; Pisapia, Alessandro; Miano, Andrea

Pegaso University, Italy; andrea.miano@unipegaso.it

Rocking and wobbling of dry-jointed masonry elements: a sensitivity analysis using DEM

Postiglione, Marco^{1,2,3}; Salvalaggio, Matteo⁴; Fierro, Tony²; Fabbrocino, Giovanni^{2,3};

Brandonisio, Giuseppe¹; Sandoli, Antonio²; Lourenço, Paulo B.⁴

1: Department of Structures for Engineering and Architecture, University of Naples Federico II, Piazzale Tecchio 80, Naples 80125, Italy; 2: Department of Biosciences and Territory, University of Molise, Via Francesco De Sanctis snc, Campobasso 86100, Italy; 3: Institute for Construction Technologies ITC-CNR, National Research Council - Branch of L'Aquila, Via G. Carducci 32, 67100 L'Aquila, Italy; 4: ISE, ARISE, Department of Civil Engineering, University of Minho, Campus de Azurém, Guimarães 4800-058, Portugal; marco.postiglione@unimol.it

Capacity prediction of existing concrete structures based on limited field testing using Bayesian compressive sampling and random finite element

Alhashmi, Abdalla¹; Abdelmaksoud, Ahmed^{1,2}; Oudah, Fadi¹

1: Dalhousie university, Canada; 2: Cairo University, Egypt; Abdalla.Alhashmi@dal.ca

Updating the reliability of sheet pile walls – 3D scans for a load-deflection curve approximation

Baumgarten, Niklas¹; Holste, Karsten^{1,2}; Jost, Berit²; Loebjinski, Maria^{1,3}; Mädge, Christian¹

1: WKC Hamburg GmbH, Veritaskai 8, Hamburg 21079, Germany; 2: HydroMapper GmbH, Veritaskai 6, Hamburg 21079, Germany; 3: Technische Universität Braunschweig, Universitätsplatz 2, Braunschweig

38092, Germany; niklas.baumgarten@wk-consult.com

Practical evaluation procedure for structural robustness assessments of steel truss bridges

Steeves, Edward; Oudah, Fadi

Dalhousie University, Canada; edward.steeves@dal.ca

Damage affecting the stability of anchored structures – a new research approach

Rebhan, Matthias J.¹; Daxer, Hans-Peter¹; Schuch, Markus²; Klass, Clemens³; Tschuchnigg, Franz¹

1: Technische Universität Graz - Institut für Bodenmechanik, Grundbau und Numerische Geotechnik, Austria; 2: ÖBB Infrastruktur AG; 3: ASFINAG Bau Management GmbH; rebhan@tugraz.at

2:00pm - 4:00pm

MS26-1: Retrofitting, strengthening and strategies to extend the service live for concrete and masonry structures

Location: **BEY 127**

Session Chair: **David Sandmann**

Session Chair: **Flávio de Andrade Silva**

Session Chair: **Daniel Cardoso**

Session Chair: **Juliane Wagner**

Session Chair: **Alois Vorwagner**

Session Chair: **Jan Berger**

7th Session Chair: Preinstorfer, Philipp / TU Wien, AT

Numerical investigation of brittle failure and tensile strength scatter in CRC systems

Lamisa, Farhat^{1,2}; Schütze, Elisabeth²; Schumann, Alexander^{1,2}

1: IU International University of Applied Sciences, 01067 Dresden, Germany; 2: CARBOCON GMBH, 01159 Dresden, Germany; farhat.lamisa@iu.org

Lap-splice analysis of carbon-reinforced concrete strengthening with DFOS

Sandmann, David¹; Beckmann, Birgit¹; Marx, Steffen^{1,2}

1: TUD Dresden University of Technology, Institute of Concrete Structures, 01062 Dresden, Germany; 2: Cluster of Excellence CARE, TU Dresden and RWTH Aachen, Germany; david.sandmann@tu-dresden.de

A simplified design approach for CRC strengthening using a single ω -table

Hasan, Md Nazmul¹; **Schumann, Alexander**^{1,2}

1: CARBOCON GMBH, 01159 Dresden, Germany; 2: IU International University of Applied Sciences, 01067 Dresden, Germany; nazmulsustcee@gmail.com, alexander.schumann@iu.org

Numerical investigation of the influence of a CRC waterproofing layer on the structural behavior of masonry arch bridges

Würgau, Carolin¹; **Keßler, Jenny**¹; Achenbach, Rebecca²; Červenka, Jan³; Beckmann, Birgit¹; Marx, Steffen¹

1: TUD Dresden University of Technology, Germany; 2: RWTH Aachen University, Germany; 3: Červenka Consulting s.r.o., Czech Republic; Jenny.kessler@tu-dresden.de

Influence of Fe-SMA embedment under semi-cyclic loading and multiple activation

Mir Pons, Antoni; del-Río-Bonnín, Sandra; Ribas, Carlos; Ruiz-Pinilla, Joaquín G.; Cladera, Antoni

Universitat de les Illes Balears, Spain; antoni.mir@uib.cat

Recovery stress behavior of Fe-SMA under cooling and semi-cyclic loading

Mir Pons, Antoni; Ruiz Pinilla, Joaquín G.; Cladera, Antoni

Universitat de les Illes Balears, Spain; antoni.mir@uib.cat

Flexural rehabilitation of damaged RC balconies using Fe-SMA bars

Rahman, Manzoor; Barros, Joaquim António Oliveira; Correia, Luís Luciano Gouveia

University of Minho, Portugal; manzoorrahman395@gmail.com

Shear strengthening mechanism and analytical model for Fe-SMA-retrofitted masonry walls

Sun, Xiaochao¹; Zhu, Hong^{1,2}; Dong, Zhiqiang^{1,2}; Yan, Wenlong³; Pan, Yijie⁴

1: Key Laboratory of Concrete and Prestressed Concrete Structures of the Ministry of Education, Southeast University, Nanjing, 211189, China; 2: National and Local Joint Engineering Research Center for Intelligent Construction and Maintenance, Southeast University, Nanjing, 211189, China; 3: School of Architecture and Engineering, Xinjiang University, Urumqi, 830047, China; 4: Fusteel Co., Ltd., Nanxun, 313009, China; 1907721149@qq.com

2:00pm - 4:00pm

MS29: Distributed acoustic sensing (DAS) in civil engineering

Location: **POT 151**
 Session Chair: **Katarzyna Zdanowicz**
 Session Chair: **Christos Karapanagiotis**
 Session Chair: **Bertram Richter**

Development towards a high frequency acoustic emission distributed acoustic sensing system

Neubeck, Robert; Kühmstedt, Mario; Gaul, Tobias; Augustin, Jörn; Beltran Perez, Oscar Dario; Tautz, Lili; Stephan, Mareike; Weihnacht, Bianca; Tschöke, Kilian; Schubert, Lars
 Fraunhofer Institute for Ceramic Technologies and Systems (IKTS), Germany;
robert.neubeck@ikts.fraunhofer.de

Distributed acoustic sensing for detection and localization of steel wire breaks

Jensen, Andrew; Frantzis, Alexander; DeJong, Matthew
 University of California, Berkeley, United States of America; ajensen5919@berkeley.edu

Monitoring of long-span structures with DAS: from local tests to 70 km remote interrogation

Diłgosz, Szymon¹; Sieńko, Rafał²; Bednarski, Łukasz³; Howiacki, Tomasz^{1,2}
 1: SHM System, Poland; 2: Faculty of Civil Engineering, Cracow University of Technology, Poland;
 3: Faculty of Mechanical Engineering and Robotics, AGH University of Science and Technology in Kraków, Poland; sd@shmsystem.pl

Distributed acoustic sensing for bridges – from traffic monitoring to damage detection

Bochenska, Marta^{1,2}; Goldyn, Michał¹; Zdanowicz, Katarzyna¹; Guzik, Artur³
 1: FOLAB GmbH, Germany; 2: University of Warmia and Mazury in Olsztyn; 3: Neubrex Infra AG;
marta.bochenska@folab.de

Simultaneous assessment of bridge traffic and bridge response with distributed acoustic sensing

Lienhart, Werner¹; Farhadi, Sasan¹; Kohlbacher, Michael¹; Agreiter, Andrea¹; Bertola, Numa²; Fabbriatore, Francesco²
 1: Graz University of Technology, Austria; 2: University of Luxembourg, Luxembourg;
werner.lienhardt@tugraz.at

Bridge traffic load monitoring using distributed acoustic sensing and machine learning

Karapanagiotis, Christos; Schrödter, Moritz; Breithaupt, Mathias; Chruscicki, Sebastian; Münzenberger, Sven; Wosniok, Aleksander
 Bundesanstalt für Materialforschung und -prüfung (BAM), Germany; christos.karapanagiotis@bam.de

Vehicle weigh-in-motion (WIM) along roadways with distributed acoustic sensing (DAS)

Jasiak, Maksymilian¹; Wu, Yan¹; Saw, Jaewon²; Yamaguchi, Marina³; Dong, Chuao¹; Chiu, Shih-Hung¹; Liu, Jingxiao¹; Hubbard, Peter⁴; Soga, Kenichi¹
 1: University of California, Berkeley, USA; 2: Exponent, USA; 3: Nippon Koei, Japan; 4: FiberSense, USA; jasiak@berkeley.edu

Crack detection on road surfaces using distributed acoustic sensing (DAS)

Yamaguchi, Marina¹; Jasiak, Maksymilian²; Saw, Jaewon³; Dong, Chuao²; Wu, Yan²; Liu, Jingxiao²; Soga, Kenichi²
 1: Nippon Koei Co., Ltd., Japan; 2: University of California, Berkeley, USA; 3: Exponent, Inc., USA;
yamaguchi-mr@n-koei.jp

4:00pm - 4:30pm

Coffee break

Location: **Exhibition and Catering Rooms: BEY E39, E26, 126**

4:30pm - 6:00pm

MS03-2: Railway track monitoring – an essential basis for the optimization of railway infrastructure

Location: **BEY 138**
 Session Chair: **Marc Wenner**
 Session Chair: **Günther Grunert**

Longitudinal Displacement of Ballast Track with Rail Expansion Joints during Traction and Braking

Uzar, Kazim; Liu, Jia
 TU Darmstadt, Germany; kuzar@vwb.tu-darmstadt.de

Track-bridge interaction for a railway bridge with longitudinally movable track

Wenner, Marc¹; Plica, Sebastian²; Röder, Robert¹; Basamad, Khadijah¹; Zeckert, Marcus³;

Missler, Michael⁴; Lippert, Peter⁴

1: MKP GmbH, Germany; 2: Dr. Plica Ingenieure Beratende Ingenieure – PartG mbB, Germany; 3: DB InfraGO AG, Germany; 4: DB InfraGO AG, Bauartverantwortung, Germany;
marc.wenner@marxkrontal.com

Track-bridge interaction – preliminary experimental results about the behavior of ballasted track on bridges**Wenner, Marc¹; Bracklow, Franz¹; Schneider, Sebastian¹; Plica, Sebastian²; Hacker, Andreas³; Nachtigall, Randy⁴; Zdanowicz, Katarzyna⁵; Huber, David⁶; Will, Elias⁷; Arana, Tomas⁸**

1: MKP GmbH, Germany; 2: Dr. Plica Ingenieure Beratende Ingenieure – PartG mbB, Germany;
 3: Konstruktionsgruppe Bauen AG; 4: DB Bahnbau Gruppe GmbH; 5: FOLAB GmbH; 6: Technical University of Munich, Chair and Institute of Road, Railway and Airfield Construction; 7: Dresden University of Technology, Institute of Concrete Structures; 8: German Centre for Rail Traffic Research;
marc.wenner@marxkrontal.com

High-speed testing of a tied arch railway bridge, Vehicle-bridge interaction at resonance**Schlegel, Florian Alexander¹; Grunert, Günther²**

1: GMG Ingenieurgesellschaft mbH, 01069 Dresden, Germany; 2: DB InfraGO AG, Berlin 10115, Germany; florian.schlegel@gmg-dresden.de

Sensor-based load–response correlation for monitoring railway bridge condition**Vospernig, Michael¹; Firus, Andrei²; Arana Villafán, Tomás³; Angermann, Falk³; Brandenstein, Max⁴**

1: REVOTEC zt gmbh, Austria; 2: isea tec GmbH, Germany; 3: German Centre for Rail Traffic Research, Germany; 4: Technical University of Darmstadt, Germany; michael.vospernig@revotec.at

Take it to the bridge – drive-by monitoring to assess railway bridge and track dynamics**Lorenzen, Steven Robert¹; Rupp, Maximilian Michael²; Brandenstein, Max²; Hübler, Clemens²**

1: Frankfurt University of Applied Sciences, Germany; 2: Technical University of Darmstadt, Germany; steven.lorenzen@fra-uas.de

4:30pm - 6:00pm

MS05-2: Research on shape memory alloys in Germany

Location: **BEY E40**
 Session Chair: **Elyas Ghafoori**
 Session Chair: **Thomas Niendorf**
 Session Chair: **Hans Jürgen Maier**
 Session Chair: **Anja Weidner**
 Session Chair: **Philipp Krooss**

Influence of Fe-SMA material nonlinearity on the bond-slip and debonding behavior**Jübner, Paul¹; Li, Lingzhen²; Wang, Sizhe³; Ghafoori, Elyas¹**

1: Leibniz University Hannover, Germany; 2: The Hong Kong Polytechnic University, Hong Kong, China;
 3: Nanyang Technological University, Singapore; juebner@stahl.uni-hannover.de

Recent advances in shear strengthening of concrete structures using self-prestressed Fe-SMA**Sun, Yu^{1,2}; Sun, Xiaochao¹; Hilscher, Marlon²; Zhu, Hong¹; Dong, Zhiqiang¹; Pan, Yijie³; Ghafoori, Elyas²**

1: Southeast University, 211189 Nanjing, China.; 2: Institute for Steel Construction, Faculty of Civil Engineering and Geodetic Science, Leibniz University Hannover, 30167 Hannover, Germany.; 3: Fusteel Co., Ltd., 313011 Huzhou, China.; 1907721149@qq.com

Tensile behavior of Fe-SMA bar reinforced UHPFRC**Shen, Xiujiang^{1,2}; Li, Yulin²; Randl, Norbert¹**

1: Carinthia Unveristy of Applied Sciences, Austria; 2: Changsha University of Science & Technology, China; x.shen@fh-kaernten.at

Modeling pure shear in Z-shaped mortar specimens reinforced with SMA fibers

Makhmudov, Jaloliddin; Choi, Eunsoo; Kim, Kiyeon; Jang, Minkyung; Namgung, Min
 Department of Civil and Environmental Engineering, Hongik University, Seoul 04066, Korea;
jmax@g.hongik.ac.kr

Activation of shape memory Fe-SMA reinforced concrete beams subjected to localized fires

Martins-Robalino, Austin; Jasinski, Melody; Rajab, Riad; Palermo, Dan; Gales, John
 York University, Canada; austinmr@my.yorku.ca

	Seismic retrofit strategy based on self-centering rocking frames Ferraioli, Massimiliano; Mottola, Salvatore; Pecorari, Osvaldo; Munerotto, Sergio Department of Engineering, University of Campania "Luigi Vanvitelli, Via Roma, 9, Aversa, 81031, Italy; salvatore.mottola@unicampania.it
4:30pm - 6:00pm	MS08-2: Hybrid construction and strengthening with wire arc additive manufacturing Location: BEY E17 Session Chair: Yvonne Ciupack Session Chair: Leroy Gardner Session Chair: Elyas Ghafoori Session Chair: Vittoria Laghi Session Chair: Vlad-Alexandru Silvestru Large-scale WAAM setup for hybrid construction and strengthening Ghafoori, Elyas Leibniz University of Hannover, Germany; ghafoori@stahl.uni-hannover.de Influences of shielding gas on wire arc additive manufacturing process for structural steel Kampffmeyer, Dirk Messer SE & Co. KGaA, Germany; dirk.kampffmeyer@messergroup.com Hybrid DED-arc of multi-materials: mechanical properties and FE analysis Imran, Aatif; Amraei, Mohsen; Salminen, Antti University of Turku, Finland; mohsen.amraei@utu.fi Mechanical performance and failure of ultrahigh-strength welded hybrid structures Afkhami, Shahriar¹; Ahola, Antti²; Penttilä, Sakari¹; Lipiäinen, Kalle²; Lund, Hannu¹; Skriko, Tuomas¹ 1: Laboratory of Welding Technology, LUT University, Lappeenranta, Finland; 2: Laboratory of Steel Structures, LUT University, Lappeenranta, Finland; Shahriar.afkhami@lut.fi 3D-scan based analysis of the relative rib area fR of additively manufactured reinforcement using WAAM Locher, Luca; Braml, Thomas University of the Bundeswehr Munich; luca.locher@unibw.de Geometric imperfections and post-fire behavior of WAAM stub columns Yan, Lu¹; Liu, Dechuang¹; Huang, Senbin²; Cai, Yancheng²; Mensinger, Martin¹ 1: Technical University of Munich, Germany; 2: Hong Kong Metropolitan University; lu.yan@tum.de
4:30pm - 6:00pm	MS10-2: Advances and applications of vibration-based structural health monitoring Location: POT 112 Session Chair: Alvaro Cunha Session Chair: Carlos Moutinho Session Chair: Sergio Pereira How financial methods can help to evaluate sensor data Beering, Carina Helmut Schmidt University Hamburg, Germany; beeringc@hsu-hh.de Assessing displacement estimation from velocity vs. acceleration: effectiveness and limitations for SHM applications Imani Moghaddam, Hamid¹; Russo, Salvatore¹; Betti, Raimondo²; Stella, Alberto¹; Saetta, Anna¹ 1: Iuav University of Venice, Italy; 2: Columbia University of New York, USA; hamidimani.m@gmail.com Covariate-dependent functional principal component analysis for SHM Wittenberg, Philipp¹; Neumann, Lizzie¹; Maes, Kristof²; Gertheiss, Jan¹ 1: Helmut Schmidt University, Germany; 2: KU Leuven, Belgium; pwitten@hsu-hh.de A simulated data-driven SHM framework for bridge infrastructures Rillo, Vera; De Angelis, Alessandra; Maddaloni, Giuseppe University of Sannio, Italy; v.rillo@studenti.unisannio.it A data-driven framework for vibration-based damage detection: application to the openLAB Bridge benchmark Stoura, Charikleia^{1,2}; Jian, Xudong¹; Dertimanis, Vasilis¹; Aguzzi, Giulia³; Imposa, Giacomo³; Chatzi, Eleni¹

	1: ETH Zürich, Switzerland; 2: Politecnico di Milano, Italy; 3: Kistler Instrumente AG, Switzerland; charikleia.stoura@ibk.baug.ethz.ch Effect of damage versus environmental variations on the background-resonant-inertial components <u>Geuzaine, Margaux</u> University of Liège, Belgium; mgeuzaine@uliege.be
4:30pm - 6:00pm	MS13-2: Intelligent digital methods for extending the service life of structures beyond 100 years Location: POT 51 Session Chair: Chongjie Kang Session Chair: Steffen Marx Ontology-based integration of spatial sensor information in digital twins <u>Rolke, Fabian</u>¹; Becks, Henrik²; Göbels, Anne¹; Schulz, Oliver¹; Beetz, Jakob¹ 1: Design Computation, RWTH Aachen University; 2: Chair and Institute of Structural Concrete, RWTH Aachen University; rolke@dc.rwth-aachen.de Automatic semantic enrichment for BIM-based SHM <u>Rudenko, Iryna</u>¹; Kähler, Philipp²; Rackwitz, Frank¹; Petryna, Yuri² 1: Technische Universität Berlin, Chair of Soil Mechanics and Geotechnical Engineering, Gustav-Meyer-Allee 25 13355 Berlin, Germany; 2: Technische Universität Berlin, Chair of Structural Mechanics, Gustav-Meyer-Allee 25, 13355 Berlin, Germany; i.rudenko@tu-berlin.de Scan2SAM – a concept for the derivation of structural analytic models of bridges from point clouds <u>Vassilev, Hristo</u>; Blankenbach, Jörg RWTH Aachen University, Germany; hristo.vassilev@gia.rwth-aachen.de Towards reliable digital twins for bridges: quantifying model form uncertainty <u>Andrés Arcones, Daniel</u>^{1,2}; Weiser, Martin³; Koutsourelakis, Phaedon-Stelios²; Unger, Jörg F.¹ 1: Bundesanstalt für Materialforschung und -prüfung (BAM), Germany; 2: Technical University of Munich (TUM), Germany; 3: Zuse Institute Berlin (ZIB), Germany; daniel.andres-arcones@bam.de A surrogate model for approximating the load-bearing behavior of prestressed concrete bridges <u>Otto, Marie</u>; Sprenger, Bjarne; Schnellenbach-Held, Martina University of Duisburg-Essen, Germany; marie.otto@uni-due.de Quantitative damage progression analysis using globally aligned time-series 3D digital models <u>Bae, Hyunjin</u>; An, Yun-Kyu Sejong university, Korea, Republic of (South Korea); bberry25@sju.ac.kr
4:30pm - 6:00pm	MS26-2: Retrofitting, strengthening and strategies to extend the service live for concrete and masonry structures Location: BEY 127 Session Chair: David Sandmann Session Chair: Flávio de Andrade Silva Session Chair: Daniel Cardoso Session Chair: Juliane Wagner Session Chair: Alois Vorwagner Session Chair: Jan Berger 7th Session Chair: Preinstorfer, Philipp / TU Wien, AT Electromagnetic quality assessment of fiber orientation in cement-based composites <u>Carrera, Kristýna</u>¹; Mára, Michal¹; Konrád, Petr¹; Máca, Petr²; Beckmann, Birgit²; Sovják, Radoslav¹ 1: Czech Technical University in Prague, Czech Republic; 2: Dresden University of Technology, Germany; kristyna.carrera@fsv.cvut.cz Distribution patterns of surface tensile strength in low-strength concrete slabs <u>Berger, Jan</u>¹; Marx, Steffen²; Bösche, Thomas¹ 1: University of Applied Sciences Dresden, Germany; 2: TUD Dresden University of Technology, Institute of Concrete Structures, Germany; jan.berger@htw-dresden.de The role of bond, friction and hook-bearing on anchor pull-out in low-strength concrete: experiments and design implications Demir, Ugur¹; Akyol, Can²; Cavunt, Yavuz Selim³; Palaoglu, Zulkuf Rohat⁴; Bozgul, Berkay⁴; Avci,

	Ali Suayp⁴; Tako, Serhan⁴; Akpınar, Erkan⁵; Orakcal, Kutay⁶; İlki, Alper⁷ 1: İzmir Institute of Technology; 2: Is Bankasi; 3: SİKA; 4: TUPRAS; 5: Kocaeli University; 6: Bogazici University; 7: Istanbul Technical University; ailki@itu.edu.tr Experimental study on the creep behavior of old, preloaded concrete Pech, Jenny¹; Herbers, Max²; Speck, Kerstin¹; Schacht, Gregor²; Marx, Steffen¹ 1: TUD Dresden University of Technology, Institute for Concrete Structures, 01062 Dresden, Germany; 2: Marx Krontal Partner MKP GmbH, Altenzeller Straße 29, 01069 Dresden; jenny.pech@tu-dresden.de Smart sensing of restrained shrinkage in UHPC overlays using DFOS Daneshvar, Dana¹; Robisson, Agathe²; Preinstorfer, Philipp¹ 1: Institute of Structural Engineering, TU Wien, Karlsplatz 13/212-2, A-1040 Vienna, Austria; 2: Institute of Material Technology, Building Physics, and Building Ecology, TU Wien, Karlsplatz 13/207-1, A-1040 Vienna, Austria; dana.daneshvar@tuwien.ac.at Higher-order multivariate environmental influences in structural health monitoring Neumann, Lizzie; Wittenberg, Philipp; Gertheiss, Jan Helmut Schmidt University, Hamburg, Germany; jan.gertheiss@hsu-hh.de
4:30pm - 6:00pm	MS28: Impact of climate change on infrastructure Location: BEY 117 Session Chair: Julian Unglaub Inspection of rail and road infrastructure considering climate change related effects Reinprecht, Volker¹; Rebhan, Matthias²; Kieffer, Scott¹ 1: Institute of Applied Geosciences, Graz University of Technology, Austria; 2: Institute of Soil Mechanics, Foundation Engineering and Computational Geotechnics, Graz University of Technology, Austria; rebhan@tugraz.at Climate change effects on the durability and reliability of reinforced concrete structures Landi, Filippo; Croce, Pietro Department of Civil and Industrial Engineering, University of Pisa, Italy; filippo.landi@ing.unipi.it Alternative evaluation approach to determine the chloride migration coefficient Rokoß, Nils-Christian; Kapteina, Gesa HafenCity Universität Hamburg, Germany; nils.rokoss@hcu-hamburg.de The use of hyperspectral imaging for chloride detection in concrete in the presence of chloride-induced steel corrosion and protective coatings Habbaba, Nura¹; Mustapha, Samir²; Dawy, Zaher³ 1: American University of Beirut, Lebanon (Lebanese Republic); 2: American University of Beirut, Lebanon (Lebanese Republic); 3: American University of Beirut, Lebanon (Lebanese Republic); nuh00@mail.aub.edu Towards system identification of degraded prestressed concrete bridges Wessels, Jan Malte¹; Flack, Christian¹; Antonau, Ihar²; Kowalsky, Ursula¹ 1: Institute of Structural Analysis, Technische Universität Braunschweig, Germany; 2: Chair of Structural Analysis, Technische Universität München, Germany; c.flack@tu-braunschweig.de From inspection to maintenance: an AI-driven tool to optimize maintenance and its planning Zeman, Elisabeth^{1,2}; Di Luca, Daniele³; Spiezia, Nicolò³; Donatelli, Alessandro³; Bergmeister, Konrad^{1,2} 1: Institute of Structural Engineering/BOKU University, Austria; 2: Bergmeister ZT GmbH, Austria; 3: KnowCE SpA, Italy; konrad.bergmeister@boku.ac.at
4:30pm - 6:00pm	PS1: Structural health monitoring and damage detection Location: BEY 245 Session Chair: Pavel Ryjáček AI-driven data analysis of monitoring data in natural language Tutschku, Morris; Burtscher, Stefan; Huber, Peter Rocket NG, Austria; morris.tutschku@rocket-ng.at 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

1: Leibniz University Hannover, Germany; 2: LPI Ingenieurgesellschaft mbH, Hannover, Germany;
lange@tnt.uni-hannover.de

Millimetre GNSS monitoring of technical objects

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

1: BHT, Germany; 2: navxperience; 3: TU Dresden; kickler@bht-berlin.de

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

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

Fraunhofer IKTS, Germany; bianca.weihnacht@ikts.fraunhofer.de

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

Grzesiak, Szymon¹; de Sousa, Chrstoph¹; Grzyb, Krzysztof²; Pahn, Matthias¹

1: RPTU Kaiserslautern, Germany; 2: Silesian University of Technology, Poland;
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Strain-based masonry damage detection using neural networks: a numerical study

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

University of Perugia, Italy; alinaelena.eva@dottorandi.unipg.it

4:30pm - 6:00pm

PS4: Structural behaviour and performance of concrete and hybrid structures

Location: **BEY 137**

Session Chair: **Enzo Martinelli**

Development of a Eurocode 2-compliant model for predicting the flexural behavior of chemically prestressed CTRC plates

Dhahir, Mohammed; Dräger, Jasmin; Beckmann, Birgit; Marx, Steffen

TU Dresden, Germany; mohammed.dhahir@tu-dresden.de

A physically-based and code-aligned design method for longitudinal shear of RACCS

Saccone, Marta¹; Stochino, Flavio¹; Zucca, Marco¹; Simoncelli, Marco²

1: Department of Civil, Environmental Engineering and Architecture, University of Cagliari, Cagliari 09123, Italy; 2: Department of Architecture, Built Environment and Construction Engineering, Politecnico of Milano, Milano 20133, Italy; marta.saccone@unica.it

Steel plate to concrete connections: comparison of elastic and plastic analysis methods

Della Corte, Gaetano

University of Naples Federico II, Italy; gaetano.dellacorte@unina.it

Flexural behavior of timber-concrete composite structures with dowel, notch and adhesive connections

Chen, Likang¹; Van der Sanden, Nick¹; Riexinger, Sven²; Vorel, Jan³; Wan-Wendner, Lin¹

1: Department of Civil Engineering, KU Leuven University, Sint-Katelijne-Waver, Belgium;
 2: Konstruktives Kleben, fischerwerke GmbH & Co. KG, Bebelstraße 11, 79108 Freiburg, Germany;
 3: Faculty of Civil Engineering, Czech Technical University in Prague, Prague, Czech Republic;
likang.chen@kuleuven.be

Experimental study on flexural and shear bearing capacities of naturally corroded RC beams

Xiang, Ting-Yu; Jiang, Chao; Gu, Xiang-Lin; Yu, Pei-Xi

Tongji University, China, People's Republic of; 2431009@tongji.edu.cn

Numerical simulation of torsional behavior of corroded reinforced concrete members

Yu, Pei-Xi; Jiang, Chao; Gu, Xiang-Lin

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