

PROGRAM

Sept. 01-05. 25
Graz | Austria



13th International Conference on
Structural Health Monitoring of Intelligent Infrastructure

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Welcome

Dear colleagues,

We welcome you here in Graz and are delighted to present the conference programme for the 13th International Conference on Structural Health Monitoring of Intelligent Infrastructure (SHMII-13), organised under the auspices of the Society for Civil Structural Health Monitoring (SCSHM, formerly ISHMII). This conference serves as a dynamic forum for scientists, engineers, industry leaders, researchers, experts from the public sector, infrastructure owners and representatives of professional associations from around the world to exchange ideas and collaborate.

More than 200 papers will be presented in over 30 sessions, highlighting the latest developments in intelligent sensor technologies, sensor networks, data processing and management, diagnosis and prognosis, and life cycle assessment. The discussions cover a wide range of civil infrastructure, including bridges, dams, tunnels, retaining walls, road and rail networks, high-rise buildings and much more. We would like to invite you to actively participate in the discussion and contribute further content on the above-mentioned topics. This program booklet may not reflect the current status of the programme. We therefore kindly ask you to take a look at the digital conference programme (<https://www.conftool.com/shmii-13/>). Here you can also directly access the conference proceedings, which contain the extended abstracts and full papers presented at the conference.

We hope that the conference presentations and accompanying conference reports will serve as a lasting source of inspiration for future research, innovation and international cooperation in the field of SHM.



Werner Lienhart
Conference Chair



Markus Krüger
Conference Co-Chair

Program At A Glance

Monday Sept 1 st		Tuesday Sept 2 nd	Wednesday Sept 3 rd	Thursday Sept 4 th	Friday Sept 5 th	
Morning		Opening	Keynotes II	Keynotes III	Full Day Technical Tours	½ Day Technical Tours
		Keynotes I	Technical Sessions	Technical Sessions		
Afternoon	Council Meeting(restricted to SCSHM council members)	Technical Sessions	Lunch	Lunch		
		Lunch	Technical Sessions	Technical Sessions		
		Technical Sessions	Guided City Tour	Closing		
Evening	Welcome Reception		Gala Dinner			

Tuesday, 02|Sept|2025

9:30am 10:00am	Opening Ceremony Chair: Werner Lienhart Chair: Markus Krueger	Location HS P1						
10:00am 11:00am	Keynote Session I Chair: Markus Krueger Chair: Werner Lienhart	Location HS P1	Digitalizing infrastructure: Advancing structural health monitoring for smarter asset management <u>Sylvia Keßler</u> SHM for bridges – the work flow <u>Christian Sodeikat</u>					
Coffee Break Location: Exhibition Area								
11:20am 12:20pm	Sp. Session 1: Field Applications of SHM to extend the Lifespan of Railway Bridges Chair: Sonja Dallinger Chair: Christoph M. Monsberger	Location HS P2	Sp. Session 2: Geophysical Monitoring of Infrastructure Chair: Michael Behm Chair: Kourosh Nasrollahi	Location HS BE01	Sp. Session 3: SHM in the frame of a Digital Twin in Civil Engineering Chair: Christian Grosse Chair: Frank A. Lehmann	Location TDK		
	11:20am - 11:35am Monitoring of Fatigue Crack Propagation by Means of Distributed Fiber Optic Sensing <u>Petr Dohnalik</u> , Stefan Lachinger, Maciej Kwapisz, Alois Vorwagner		11:20am - 11:35am Rail track subsurface imaging from train vibrations recorded at dark fiber networks <u>Michael Behm</u> , Michael Brauner		11:20am - 11:35am Advanced structural health monitoring and predictive maintenance of the Parchi viaduct using distributed fiber optic sensors and digital twin technology Massimo Penasa, <u>Nils Weissenbach</u>			
	11:35am - 11:50am Updating prediction of fatigue reliability index of railway bridges using structural monitoring data and updated load histories <u>Marian Ralbovsky</u> , Stefan Lachinger		11:35am - 11:50am Monitoring of concrete infrastructure with active ultrasound coda wave interferometry <u>Niklas Epple</u> , Camila Sanchez Trujillo, Daniel Fontoura Barroso, Julia Hau, Ernst Niederleithinger		11:35am - 11:50am A digital twin based integrated sustainability and quality assurance concept for subway constructions <u>Christian Grosse</u> , Otto Wurzer			
	11:50am - 12:05pm Monitoring of wind induced vibration on a tied-arch railway bridge. <u>Pablo Castillo Ruano</u> , Cesar Martinez, Sonja Dallinger		11:50am - 12:05pm Finite element mesh construction for seismic analysis using drone imagery <u>Evan Delaney</u> , Patrick Marty, Lars Gebraad, Andrea Zunino, Andreas Fichtner		11:50am - 12:05pm Evolving reliability-based condition indicators for structural health monitoring into a digital twin of a cable-stayed bridge <u>Martin Herbrand</u> , Marc Wenner, Alex Lazoglu, Christof Ullerich, Gerhard Zehetmaier, Steffen Marx			
	12:05pm - 12:20pm Acoustic emission monitoring of fatigue cracks for railway steel bridge inspection <u>Mikhail Prokofyev</u> , Heribert Marihart, Gerald Lackner		12:05pm - 12:20pm A review of methods and challenges for monitoring of differential settlement in railway transition zones <u>Kourosh Nasrollahi</u> , Jens Nielsen, Jelke Dijkstra					
Lunch Break Location: Exhibition Area								
1:35pm 2:50pm	Sp. Session 4-1: Structural Health Monitoring of Intelligent Civil Infrastructure using Fibre Optic Sensing Chair: Tomasz Howiacki Chair: Francesco Fabbriatore	Location HS P2	Sp. Session 5-1: Implementing Structural Monitoring in Daily Practice: Challenges and Solutions Chair: Falk Hille Chair: Frank A. Lehmann	Location HS BE01	Sp. Session 6: Engineering Applications of Artificial Intelligence for SHM Chair: Tomasz Owerko Chair: Karolina Tomasziewicz	Location TDK	Sp. Session 7-1: Computer Vision-based SHM Chair: Roland Kromanis Chair: Maria Pina Limongelli	Location HS AE06
	1:35pm - 1:50pm Advancements in Distributed Fiber-Optic Sensing: Brillouin and Rayleigh Technologies for Geotechnical and Structural Monitoring <u>Nils Nöther</u> , Massimo Facchini, Juan Pablo Aguilar-López		1:35pm - 1:50pm Monitoring of civil engineering structures – current and future use cases <u>Joyal K. George</u> , Kristian von Wangenheim, Felix Kaplan, Ronald Schneider, Iris Hindersmann		1:35pm - 1:50pm Structural damage detection, localization, quantification for high-rise buildings under earthquake excitations based on machine learning and sub-structuring approach <u>Mohamed H. Abdelbarr</u> , Yoshiki Ikeda, Sami Masri		1:35pm - 1:50pm Perspectives on vision-based vibrational structural health monitoring by drones <u>Tommaso Panigati</u> , Pier Francesco Giordano, Daniel Tonelli, Maria Pina Limongelli, Daniele Zonta	
	1:50pm - 2:05pm Hybrid monitoring systems: synergising distributed fibre optic sensing with spot measurements <u>Rafał Sienko</u> , <u>Tomasz Howiacki</u> , Łukasz Bednarski, Katarzyna Zuziak		1:50pm - 2:05pm A structural health monitoring framework for intelligent and sustainable infrastructure: a conceptual perspective <u>Masoud Pedram</u> , <u>Su Taylor</u> , Gerard Hamill		1:50pm - 2:05pm „Machine learning-based data interpretation and visualization for tunnel monitoring: A case Study of changshui airport tunnel“ <u>Asif Ahmed Sourov</u> , Yadong Xue, Yongfa Guo, Wenyun Ding, Jinjing Yang		1:50pm - 2:05pm Universal unsupervised image segmentation model of multi-type component and damage for vision-based autonomous UAV inspection of bridges <u>Guangshu Yang</u> , Chuao Zhang, <u>Yang Xu</u>	
	2:05pm - 2:20pm Water distribution pipeline anomaly detection using distributed acoustic sensing (DAS) <u>Maksymilian Jasiak</u> , Shih-Hung Chiu, Jaewon Saw, Peter Hubbard, David Katzev, Kenichi Soga		2:05pm - 2:20pm Best practices for data acquisition system design: Practical wisdom for engineers and practitioners <u>Tony Simmonds</u> , <u>Brent Randall</u>		2:05pm - 2:20pm Developing physics-informed neural networks for structural parameter identification of beams with moving loads <u>Anmar Ibrahim Fadhil Al-Adly</u> , Prakash Kripakaran		2:05pm - 2:20pm Large-Scale Structural Anomaly Detection During Seismic Events Using Optical Flow and Transfer Learning from Video Data <u>Sifan Wang</u> , Taisei Saida, Mayuko Nishio	
	2:20pm - 2:35pm Integrating Distributed Acoustic Sensing for Damage Detection in Old Pre-Stressed Concrete Girders: Preliminary Experimental Results <u>Lisa Strasser</u> , Werner Lienhart, Thomas Moser, Andrej Anžlin, Mirko Kosič, Maja Kreslin, Doron Hekič		2:20pm - 2:35pm From Insight to Action: Deploying SHM for a suspension bridge <u>Heikki Lilja</u> , Atte Mikkonen, Eero Ukkonen		2:20pm - 2:35pm Structural Health Monitoring of a suspended steel infrastructure: A statistical approach <u>Nicola Molon</u> , Filippo Casarin, Alessandro Targa, Renzo Codato, Francesca da Porto		2:20pm - 2:35pm Development of a Wireless Stereo Vision System for 3D Displacement Online Long-Term Monitoring of Tall Structures <u>Miaomin Wang</u> , Ki-Young Koo	
	2:35pm - 2:50pm Structural performance monitoring for concrete girder bridges with distributed fiber optic sensors <u>Francesco Fabbriatore</u> , Numa Bertola		2:35pm - 2:50pm Use of Monitoring for Highway Bridges on Federal Highways in Germany – Current Status and Future Development <u>Iris Hindesmann</u>		2:35pm - 2:50pm Is it possible that AI can help us detect all damage in structural assets? A discussion on the scope of applicability of DL methods for diagnosis of the construction assets's technical condition <u>Karolina Tomasziewicz</u> , Tomasz Owerko		2:35pm - 2:50pm Overview and Challenges of Computer Vision-Based Visual Inspection for the Assessment of Bridge Defects <u>Rizwan Ullah Khan</u> , Roland Kromanis	
Coffee Break Location: Exhibition Area								

Tuesday, 02|Sept|2025

3:10pm 4:25pm	Sp. Session 4-2: Structural Health Monitoring of Intelligent Civil Infrastructure using Fibre Optic Sensing Chair: Zhenkun Li Chair: Alessio Höttges	Location HS P2	Sp. Session 5-2: Implementing Structural Monitoring in Daily Practice: Challenges and Solutions Chair: Falk Hille Chair: Frank A. Lehmann	Location HS BE01	Sp. Session 8: Advanced Geospatial and Engineering Surveying Solutions for Infrastructure Health Monitoring Chair: Craig Matthew Hancock Chair: Panagiotis Psimoulis	Location TDK	Sp. Session 7-2: Computer Vision-based SHM Chair: Rolands Kromanis Chair: Maria Pina Limongelli	Location HS AE06
	3:10pm - 3:25pm AI-Driven Smart-Liner System with DFOS for Digital Twin-Based Real-Time Monitoring of Oil and Gas Infrastructure Junyi Duan, Xingyu Wang, Huaixiao Yan, Sike Wang, Ying Huang, <u>Chengcheng Tao</u>		3:10pm - 3:25pm Study on the suitable sensor locations for tilt monitoring of power transmission tower <u>Tatsuya Kurihara</u> , Masayuki Saeki		3:10pm - 3:25pm Monitoring Slow and Dynamic Deformations of High-Rise Buildings Using Low-Cost GNSS Receivers <u>Jayamanne Mudalige Oshadee Jayamanne</u> , Panagiotis Psimoulis, John Owen, Nigel Penna, Chenyu Xue		3:10pm - 3:25pm Integrating Mixed Reality Technology, Deep Learning and Domain Knowledge for bridge inspection <u>Zhe Yu Liu</u> , Zhen Sun, Patricia Vanova	
	3:25pm - 3:40pm Middle range, rapid strain sensing based on PNC-OFDR and its application to bridge monitoring <u>Yuichi Yoshimura</u> , Kotaro Fujiwara, Yohei Taira, Michio Imai, Chao Zhang, Fumihiko Ito		3:25pm - 3:40pm On potentials and challenges of physics-informed structural health monitoring for civil engineering structures <u>Matthias Baeßler</u> , Ronald Schneider		3:25pm - 3:40pm Potential of profile laser scanning (PLS) for the application in load tests <u>Florian Schill</u> , Gregor Schacht, Torsten Harke		3:25pm - 3:40pm 3D projection of AI-derived concrete cracks on a Hydro Dam outlet tower <u>Ludvig Emgård</u>	
	3:40pm - 3:55pm Advanced Structural Monitoring and Predictive Maintenance for Railway Bridges Using Distributed Fiber-Optic Sensors Felipe Munoz, Iván Eguidazu, Julio Rodriguez, Diego Gaston-Beraza, Fernando Basarte, <u>Javier Urricelqui</u> , José María Perez-Casas, Marco Jimenez-Rodriguez		3:40pm - 3:55pm Retrofitting load measurement devices on existing anchored structures <u>Matthias J. Rebhan</u> , Hans-Peter Daxer, Markus A. Schuch, Clemens Klass, Florian Scharinger, Michael Reiterer		3:40pm - 3:55pm Advanced infrastructure health monitoring with multi-sensor systems and geospatial technologies <u>Ernst Geutebrueck</u> , Ahmed Elsaid, Bastian Merten, Georg Glueck		3:40pm - 3:55pm Computer vision-based recognition of random traffic flow for live load performance analysis of existing bridges <u>Weilei Yu</u> , Mayuko Nishio	
	3:55pm - 4:10pm Structural health monitoring in underground mining using fiber-optic sensing and 3D laser scanning for digital twin development <u>Michael Dieter Martin</u> , Nils Nöther, Jens-André Paffenholz		3:55pm - 4:10pm Reliability assessment of structural health monitoring systems using model – assisted probability of detection and bayesian model updating <u>Yogi Jaelani</u> , Francesca Marsili, Jan Grashorn, Sven Knoth, Sylvia Keßler		3:55pm - 4:10pm LiDAR for vibration monitoring of infrastructure: stretching limits by spatio-temporal time domain frequency analysis Oliver L. Geißendörfer, <u>Christoph Holst</u>		3:55pm - 4:10pm A novel approach to bridge repair using photogrammetry and additive manufacturing <u>Raguez Taha</u> , Didem Ozevin	
	4:10pm - 4:25pm Fibradike sensor: validation through full-scale field testing <u>Alessio Höttges</u> , Carlo Rabaïotti, Alessandro Rosso		4:10pm - 4:25pm Advanced Monitoring Systems for Infrastructures: Integrating 6D Sensors and Low-Cost High-Precision GNSS Roman Windl, <u>Herbert Weitensfelder</u> , Werner Stempfhuber		4:10pm - 4:25pm Application of LiDAR technology in geodetic monitoring of reclaimed landfills <u>Grzegorz Pasternak</u> , Janina Zaczek-Peplinska		4:10pm - 4:25pm Machine vision-based super-resolution reconstruction for high-precision displacement monitoring of hydraulic structures <u>You Yang</u> , Bo Chen, Weiqi Liu, Zekai Ma	
Coffee Break Location: Exhibition Area								
4:45pm 6:00pm	Sp. Session 4-3: Structural Health Monitoring of Intelligent Civil Infrastructure using Fibre Optic Sensing Chair: Kleo Lila Chair: Christoph M. Monsberger	Location HS P2	Sp. Session 9: International SHM Standards and Guidelines Chair: Frank A. Lehmann Chair: Falk Hille	Location HS BE01	Session 10: Advanced Filtering in Structural Dynamics Chair: Mohammad Shamim Miah Chair: Michael Kohl	Location TDK		
	4:45pm - 5:00pm Identification and quantification of concrete cracks using various distributed fiber optic sensing techniques <u>Christoph M. Monsberger</u> , Madeleine Winkler, Anna Theresa Kornberger, Dirk Schlicke		4:45pm - 5:00pm Global perspectives on structural monitoring in civil engineering <u>Frank A. Lehmann</u> , Falk Hille, Branko Glišić		4:45pm - 5:00pm Dynamic monitoring using hidden markov regression model for predicting remaining useful life <u>Vincent Ifeanyi Ike</u> , Andre Jesus, Mohamed Shaheen			
	5:00pm - 5:15pm DFOS-Based Monitoring of Prestressed Concrete Bridge Girders <u>Kleo Lila</u> , Max Herbers, Bertram Richter, Andrea Agreiter, Maja Kreslin, Petra Triller, Andrej Anžlin, Werner Lienhart, Steffen Marx		5:00pm - 5:15pm Structural health monitoring guidelines for bridges in Germany <u>Falk Hille</u> , Frederik Wedel, Frank Lehmann, Stephan Pirsawetz		5:00pm - 5:15pm Identification of Damping Coefficients of Multi-degree of Freedom System <u>Mohammad Shamim Miah</u> , Werner Lienhart			
	5:15pm - 5:30pm Proposed approach for direct rail state monitoring with distributed acoustic sensing DAS <u>Szymon Długosz</u> , Tomasz Howiacki, Rafał Sienko, Łukasz Bednarski		5:15pm - 5:30pm Structural Health Monitoring in the Italian Guidelines for Bridges Giancarlo Costa, <u>Eleonora Morleo</u> , Pier Francesco Giordano, Maria Pina Limongelli		5:15pm - 5:30pm Integrated Motion Measurement – a Tool for Structural Health Monitoring? <u>Michael Kohl</u> , Jörg Friedrich Wagner			
	5:30pm - 5:45pm Monitoring Timber Structures with Fiber Optic Sensors: State of the Art and Application to a Timber Beam <u>Roberto Mansilla-Ruiz</u> , Ignacio Paya-Zaforteza, Ester Garcia-Castillo, Pedro A. Calderon		5:30pm - 5:45pm ANYTWIN - Characterization and standardization of monitoring data <u>Khadijah Basamad</u> , Oliver Mosig, Matthias Koca, Lakshanadevi Radhakrishnan, Maria Walker, Steffen Marx		5:30pm - 5:45pm Solving structural dynamics with uncertainty quantification via evidential neural operators <u>Pei-Lin Li</u> , Yi-Qing Ni, Jian-Ming Ling, Shi-Fu Liu, You-Wu Wang			
	5:45pm - 6:00pm Pi-bracket fatigue sensor for crack detection monitoring near stiffeners in bridge girders Boris Telehanic, <u>Aftab Mufti</u> , Douglas Thomson, Baidar Bakht, Evangeline Murison		5:45pm - 6:00pm Inspection as a basis for structural health monitoring Stefan Grubinger, Stefan L. Burtcher, Peter Huber, Morris Tutschku, <u>Matthias Rebhan</u>		5:45pm - 6:00pm Nonparametric identification of structural nonlinear behavior based on extended Kalman particle filter and Chebyshev polynomial model <u>Ye Zhao</u> , Bin Xu, Yikai Yuan			

Wednesday, 03|Sept|2025

8:15am 9:15am	Keynote Session II Chair: Markus Krueger Chair: Werner Lienhart	Location HS P1	Bridge in service structural monitoring: the SCSHM benchmark <u>Maria Pina Limongelli</u> Distributed fiber optic sensing in civil structural health monitoring at the next level – Realization of a comprehensive sensing network along the Brenner Base Tunnel <u>Christoph M. Monsberger</u> , <u>Fabian Buchmayer</u> , <u>Madeleine Winkler</u> , <u>Tobias Cordes</u>					
Coffee Break Location: Exhibition Area								
9:35am 10:50am	Session 11: Fibre Optic Sensing in Field Applications Chair: Neil Hoult Chair: Bin Shi	Location HS P2	Sp. Session 12-1: Point Cloud Data Applications to evaluate Structural Conditions and Performances Chair: Mayuko Nishio Chair: Yasunori Miyamori	Location HS BE01	Session 13: Non-destructive Test Methods used for Inspection and Damage Assessment of Concrete Structures Chair: Christian Grosse Chair: Subhra Majhi	Location TDK	Sp. Session 14: Smart Sensing and Artificial Intelligence for Advanced Civil Infrastructure Monitoring and Management Chair: Yuguang Fu Chair: Sasan Farhadi	Location HS AE06
	9:35am - 9:50am Insights into Rail Track Buckling from Distributed Fibre Optic Sensing Data <u>Neil Hoult</u> , Fuzheng Sun, Liam Butler, Merrina Zhang		9:35am - 9:50am A PC based FE model as an innovative learning tool in structural mechanics <u>Yasunori Miyamori</u> , Kakeru Komuro, Soushi Suto, Takanori Kadota, Takehiko Saito		9:35am - 9:50am External magnetization based elasto-magnetic sensing technique for tension monitoring of aged PSC structures <u>Junkyeong Kim</u>		9:35am - 9:50am AI-Powered vehicle classification for scalable infrastructure monitoring <u>Leonardo Iacussi</u> , Nicola Giulietti, Alessandro Lucci, Giuseppe Lucenti, Eamanuele Zappa, Paolo Chiariotti, Alfredo Cigada	
	9:50am - 10:05am Distributed Acoustic Sensing for Civil and Geotechnical Infrastructure Monitoring Applications <u>Cheng-Cheng Zhang</u> , Bin Shi, Tao Xie, Taiyin Zhang, Zhuo Chen, Zheng Wang, Qi-Yu Xu		9:50am - 10:05am RTK-enabled UAV for structural health monitoring without GCPs <u>Hojune Ann</u> , Yong-Rae Yu, Gi-Sang Kang, Juheum Oh, Jong-Jae Lee, Ki-Young Koo		9:50am - 10:05am Development of SFCW radar system for concrete structure inspection Sangho Lee, Keunhee Cho, Ji-Young Choi, Joo-Hyung Lee, Imjong Kwahk, <u>Changbin Joh</u>		9:50am - 10:05am Structural condition monitoring through information transferring with dimensional expansion <u>Jaebeom Lee</u> , Seungjun Lee, Dong-Jin Yoon	
	10:05am - 10:20 Introduction to the Fiber Optic Sensing Association (FOSA) <u>Andreas Stern</u>		10:05am - 10:20am Advanced and Efficient Monorail Facility Inspections Using Optical Measurement Technologies, Including Laser and Imaging <u>Motoki Nakamura</u> , Hirotooshi Kurashige, Hiroshi Yamazaki, Ryohei Hayashi, Kousuke Inoue		10:05am - 10:20am A Novel System Identification-Based Method for Rebar Radius Estimation in Radar SAR-Based Non-Destructive Testing <u>Kwang-Yeun Park</u> , Joo-Hyung Lee, Changbin Joh		10:05am - 10:20am Unsupervised anomaly detection for structural health monitoring: A vibration-based approach using isolation forest <u>Emad Soltani</u> , Florimond Gueniat, Mohamed Reza Salami	
	10:20am - 10:35am DFOS solutions covering full monitoring needs of an enlarged concrete deck viaduct <u>Miguel Villar</u>		10:20am - 10:35am Application method of sfm/mvs technique combined with point cloud data for inspection of steel bridges <u>Ko Yamashita</u> , Jun Kato		10:20am - 10:35am Non-contact non-destructive monitoring of concrete structures using pulsed Laser and microphones <u>Subhra Majhi</u> , Abhijit Mukherjee, Nihar Sane, Siddhant Sharma		10:20am - 10:35am Deep generative models to mitigate data scarcity in bridge structural health monitoring <u>Sasan Farhadi</u> , Mauro Corrado, Danilo Acquesta Nunes, Giulio Ventura, Giulio	
	10:35am - 10:50am Experimental study on two tunnel micro-leakage monitoring methods based on distributed fiber optic sensing technology <u>Junyi Guo</u> , Bin Shi, Jinhui Fang, Hongtao Jiang, Menya Sun						10:35am - 10:50am Smart adaptive triggering strategy for edge intelligence enabled energy-efficient sensing Shuaiwen Cui, Xiao Yu, <u>Yuguang Fu</u>	
Coffee Break Location: Exhibition Area								
11:10am 12:25pm	Session 15: Fibre Optic Sensing for Damage Detection at Bridge Strutures Chair: Harald Burger Chair: Michal Goldyn	Location HS P2	Sp. Session 12-2: Point Cloud Data Applications to evaluate Structural Sonditions and Performances Chair: Yasunori Miyamori Chair: Mayuko Nishio	Location HS BE01	Session 16: Smart Integrated Sensors and Wireless Sensors (IoT) Chair: Markus Krueger Chair: Stefan Burtscher	Location TDK	Sp. Session 17: Smart Sensing Enhanced Resilient Civil Infrastructures Chair: Jingkang Shi Chair: Yijian Zhang	Location HS AE06
	11:10am - 11:25am Post-tensioned wire breaks detection method using distributed acoustic sensing in bridges & viaducts Dinesh Lakshmanan, Felipe Muñoz, <u>Javier Urricelqui</u> , Marco Jimenez-Rodriguez		11:10am - 11:25am Re-meshing Method for Finite Element Model Updating based on Extracting Structural Anomalous Information from Point Cloud Data <u>Jiexiu Wang</u> , Mayuko Nishio		11:10am - 11:25am Integrated sensor technology for basalt-reinforced segmental lining elements <u>Alexandros Evangelatos</u> , Lukas Heindler, Robert Galler, Thomas Thurner		11:10am - 11:25am Study on the Propagation Law of Magnetic Induction Signals for Wireless Communication in Underground Structures <u>Yijian Zhang</u> , Dongming Zhang, Jingkang Shi, Mingtao Chen, Erwu Liu	
	11:25am - 11:40am Detection of steel fractures in existing prestressed bridges with DFOS <u>Harald Burger</u> , Nicholas Schramm, Oliver Fischer		11:25am - 11:40am Synthetic environment for close-range photogrammetry-based surface friction assessment of road infrastructures <u>Cheng Peng</u> , Yi Jiang, Shuo Li		11:25am - 11:40am Wind input and acceleration & displacement outputs monitoring system for high-guyed masts in ROSEHIPS project <u>Miaomin Wang</u> , Duncan Gould, Richard Stafford, Ki-Young Koo, James Brownjohn		11:25am - 11:40am Smart pavement subsurface monitoring with distributed embedded passive RF sensor network <u>Kent X. Eng</u> , Zygmunt J. Haas, Samir R. Das, Petar Djurić, Milutin Stanačević, Branko Glisic	
	11:40am - 11:55am Distributed fiber optic sensing of bridges with stress corrosion cracking <u>Michal Goldyn</u> , Max Herbers, Bertram Richter, Katarzyna Zdanowicz, Steffen Marx		11:40am - 11:55am Developing a Deep Learning-Based Method to Segment Bridge Members by using 2D Cross Sectional Point Clouds <u>Nao Hidaka</u> , Naofumi Hashimoto, Ei Watanabe, Daisuke Uchiyama		11:40am - 11:55am Wireless Multi Sensor Monitoring of Engineering Structures <u>Markus Rennen</u>		11:40am - 11:55am A wireless passive RFID patch antenna strain sensor Chengkai Wei, <u>Jingkang Shi</u> , Zhenchang Guan	
	11:55am - 12:10pm Lifetime elongation of existing prestressed bridges with a lack of structural integrity using DFOS <u>Sören Neumann</u> , Harald Burger, Sebastian Lamatsch, Oliver Fischer		11:55am - 12:10pm A 3D Virtual Assembly Method for Cable-Stayed Bridge Closure Using Laser Scanning <u>Yan Xu</u> , Zhenzhen Cao		11:55am - 12:10pm Practical approach to calibrating wireless sensors for use in structural health monitoring in an outdoor environment <u>Michael Markus Petschacher</u> , Markus Krüger		11:55am - 12:10pm 25-year field monitoring of the Tsing Ma Suspension Bridge in Hong Kong Yong Xia, Lu Zhang, Tian Lu, Xiaoyou Wang	
	12:10pm - 12:25pm Concrete signature in long-term Distributed Fiber Optic Strain Sensing: Challenges and opportunities for Structural Health Monitoring <u>Lisa Ulbrich</u> , Alessia Abbozzo, Frank Jesse, Marco di Prisco		12:10pm - 12:25pm Short- and long-term monitoring of bridges using terrestrial laser scanning data <u>Thomas Moser</u> , Werner Lienhart		12:10pm - 12:25pm eNodes: GNSS Time-Synchronised Wireless Accelerometer Measurement Nodes capable of operating indoors <u>Ki Young Koo</u> , Miaomin Wang, Zuo Zhu, James Brownjohn			
12:25pm 1:40pm	Lunch Break Location: Exhibition Area							

Wednesday, 03|Sept|2025

1:40pm 2:55pm	Session 18: FBG and DFOS Applications for Infrastructure and Environmental Monitoring Chair: Bin Shi Chair: Yitian Liang	Location HS P2	Session 19: Risk Assessment and Monitoring of Civil Structures Chair: Max Fiedler Chair: Horst Trattng	Location HS BE01	Session 20: Wind-Loaded Structures and Monitoring under Environmental Conditions Chair: Lauren Elizabeth Linderman Chair: Chao Wang	Location TDK	Sp. Session 21: Intelligent Sensing and Safety Assessment of Bridge Cluster Service Performance Chair: Shunlong Li Chair: Yapeng Guo	Location HS AE06
	1:40pm - 1:55pm Towards Accurate Road Health Monitoring: A Damage Detection System Using FBG Sensors <u>Seyed Ali Golmohammadi Tavalaei</u> , Navid Hasheminejad, Aliakbar Ghaderiaram, Wim Van den bergh, David Hernando		1:40pm - 1:55pm Structural monitoring of Zeeland Bridge - improved structural identification by combining a modular model updating framework with a mobile measurement setup during load tests <u>Floris Besseling</u> , Coen Kortendijk, Janno De Bruijn, Eliz-Mari Lourens		1:40pm - 1:55pm Understanding the dynamic behavior of large sign structures under wind loading <u>Lauren Elizabeth Linderman</u> , Nicole Johnson, Lam Nguyen, Dominik Schillinger, Michele Guala, Catherine French		1:40pm - 1:55pm Graph network representation and intelligent evaluation for service performance of bridge clusters <u>Shunlong Li</u> , Jie Wang	
	1:55pm - 2:10pm Etched fiber bragg grating sensor-based groundwater salinity monitoring for seawater intrusion <u>Hongtao Jiang</u> , <u>Junyi Guo</u> , Bin Shi, Mengya Sun, Guangqing Wei		1:55pm - 2:10pm Scotiabank saddledome roof monitoring program <u>Vidyardhar Limaye</u> , Subharajit Roy, Mark LeBlanc, Elizabeth Whittaker, Lindsay Alleyne		1:55pm - 2:10pm 6-Component Operational Modal Analysis of wind turbines for damage detection <u>Laurin Müller</u> , Anjali Dhabu, Kay Bode, Felix Bernauer, Stefanie Donner, Céline Hadzioannou		1:55pm - 2:10pm Lightweight vision fundamental model-based structural surface crack segmentation using model distillation <u>Yapeng Guo</u> , Shunlong Li	
	2:10pm - 2:25pm Geo-hazard DFOS monitoring and its applications <u>Shi Bin</u> , Honghu Zhu, Chengcheng Zhang, Mengya Sun, Wei Zhang, Taiyin Zhang, Junyi Guo		2:10pm - 2:25pm Long-term monitoring and data processing of a continuous prestressed concrete bridge <u>Marc Savard</u> , Jean-François Laflamme		2:10pm - 2:25pm Estimation of Wind Turbine Foundation Settlement and Error Modeling Using High-Resolution Dual-Orbit Satellite Data <u>Veronica Dallari</u> , Francesca Grassi, Elisa Bassoli, Francesco Mancini, Loris Vincenzi		2:10pm - 2:25pm Spatial-Temporal Graph Model for Environmental Temperature and Traffic Flow Prediction of City Regions Chenglong Lin, <u>Yang Xu</u>	
	2:25pm - 2:40pm Structural behaviors of prestressed double-T slab under loadings with seasonal effects <u>Yitian Liang</u> , Branko Glisic		2:25pm - 2:40pm Smart Structural Health Monitoring with Acoustic Emission <u>Michael Häuserer</u>		2:25pm - 2:40pm Distributed fibre optic sensing of decommissioned wind turbine blades under bending <u>Chao Wang</u> , Shaoqiu Zhang, Kieran Ruane, Vesna Jaksic, Zili Li		2:25pm - 2:40pm Ultimate flexural strength analysis of serving concrete main girders considering bridge deck pavement <u>Hongtao Cui</u> , Zhonglong Li, Yapeng Guo, Shunlong Li	
	2:40pm - 2:55pm Vibration Analysis of Ship Hulls using Fiber Bragg Grating Gethin Roberts, Irena Aarberg, <u>Werner Lienhart</u>		2:40pm - 2:55pm The collapse of the Carola bridge – Forensic engineering and palliative monitoring <u>Max Fiedler</u> , Gregor Schacht, Robert Ritter, Steffen Marx, Silke Scheerer, Luis Clages, Gino Ebell, David Czeschka, Chris Voigt		2:40pm - 2:55pm Prediction of urban wind speed during tropical cyclones using a novel deep learning-based spatiotemporal model <u>Yuan-Jiang Zeng</u> , Zheng-Wei Chen, Yi-Qing Ni, Pak-Wai Chan			
Coffee Break Location: Exhibition Area								
3:15pm 5:00pm	Sp. Session 22: Structural Health Monitoring of Transport Infrastructures using Drive-by Monitoring Chair: Zhenkun Li Chair: Daniel Cantero	Location HS P2	Sp. Session 23: Population Based Structural Health Monitoring (PBSHM) Chair: Su Taylor Chair: David Hester	Location HS BE01	Sp. Session 24: Advancements in vibration-based bridge health monitoring Chair: Carlo Rainieri Chair: Daniele Zonta	Location TDK	Session 25: Materials-Based Monitoring and Structural Health Assessment Chair: Alfred Strauss Chair: Jasper Vollmert	Location HS AE06
	3:15pm - 3:30pm Data-Driven Monitoring Solutions for Concrete Structures: Long-Term Insights with CorroDec2G Sensors Christian Steffes, <u>Roman Koch</u>		3:15pm - 3:30pm A methodology for data collection and aggregation in population-based structural health monitoring ecosystems David Ren-Huang Lim, <u>Alan J. Ferguson</u> , Daniel S. Brennan, David Hester, Roger Woods		3:15pm - 3:30pm Preliminary results from a field application of dynamic monitoring on three spans of a railway bridge <u>Eleonora Massarelli</u> , Marco Civera, Giulio Ventura, Bernardino Chiaia		3:15pm - 3:30pm Intelligent Imaging: Transforming Concrete Assessment Methods with AI <u>Afaq Ahmad</u> , Vagelis Plevris, M Ullah, Junaid Mir	
	3:30pm - 3:45pm Numerical Dataset for benchmarking of Drive-by Bridge Monitoring Methods Daniel Cantero, Zohaib Sarwar, Abdollah Malekjafarian, Robert Corbally, Mehrisadat Makki Alamdari, Prasad Cheema, Jatin Aggarwal, Hae Young Noh, Jingxiao Liu		3:30pm - 3:45pm Towards a plug and play population-based structural health monitoring aggregation pipeline design for resource constrained systems David Ren-Huang Lim, Alan J. Ferguson, Connor O'Higgins, David Hester, Roger Woods		3:30pm - 3:45pm A damage screening method of the concrete slab focusing on correlation of mode shapes Takanori Kadota, Takuya Daigo, Akihiro Tomioka, Yasunori Miyamori, Toshiyuki Oshima		3:30pm - 3:45pm Monitoring of Non-Linearities in Fatigue Degradation of Metallic Materials Using Techniques beyond Stress and Strain <u>Christian Boller</u> , Peter Starke	
	3:45pm - 4:00pm Indirect footbridge damage classification using explainable deep learning: a field testing study <u>Zhenkun Li</u> , Yifu Lan, Weiwei Lin		3:45pm - 4:00pm Advancing PEAR: Development of a Bridge Benchmark Datasets for PBSHM Research Connor O'Higgins, Tristan Gowdrige, David Hester, Keith Worden, Daniel S. Brennan		3:45pm - 4:00pm Feasibility of micro-motion from SAR imagery for vibration-based SHM Alessandro Lotti, Aleksanteri B. Vattulainen, Chiara Suppi, Sebastian Diaz Riofrio, Pietro Milillo, Enrico Tubaldi, <u>Daniele Zonta</u> , Carmine Clemente		3:45pm - 4:00pm Towards structural health monitoring of clay-printed structures <u>Jasper Vollmert</u> , Patricia Peralta, Adel Alataassi, Alexander Chmelnizkij, Kay Smarsly	
	4:00pm - 4:15pm Drive-by bridge modal identification under multi-source excitations Jie Tan, <u>Jiantao Li</u>		4:00pm - 4:15pm A Transfer Learning approach for damage identification in operational viaducts Eleonora Morleo, Maria Pina Limongelli, Andrea Piscini, Edoardo Troielli		4:00pm - 4:15pm Setting an optimal threshold for novelty detection in data-driven Structural Health Monitoring Alessio De Corso, <u>Carlo Rainieri</u>		4:00pm - 4:15pm Icelandic turf houses: A one-year monitoring overview Kathryn Ann Teeter, Björn Marteinsson, Ágústa Kristófersdóttir, Alma Sigurðardóttir, Dórótea H Sigurðardóttir	
	4:15pm - 4:30pm Field test on tunnel indirect damage identification from moving train response <u>Qi Li</u> , Xiongyao Xie, Kun Zeng		4:15pm - 4:30pm The future of conservation: Citizen Science models for the photomonitoring of cultural heritage Antonio Cosentino, <u>Jessica Clementi</u> , Antonio Molinari, Veronica Sanvito, Paolo Mazzanti		4:30pm - 4:45pm Model Updating and Damage Detection for Bridge Integrity Management <u>Eray Temur</u> , Maria Pina Limongelli, Andrea Piscini, Edoardo Troielli		4:30pm - 4:45pm Detailed material testing of adobe structures to complete a comprehensive SHM approach that includes laser scanning and ambient vibration studies <u>Shakhzod Takhirov</u> , Zukhritdin Ergashev, Bakhodir Rakhmonov, Amir Gilani, Mirzokhid Akhmedov, Ravshan Shamansurov	
			4:45pm - 5:00pm A novel AI-Wavelet based framework for benchmark data analysis in structural health monitoring Ahmed Silik, Mohammad Noori, Nabeel Farhan, Tianyu Wang, Wael Altabay, Zhishen Wu		4:45pm - 5:00pm On a data compression technique for acceleration signals from a railway bridge Pranav Yadav, <u>Vaibhav Gupta</u> , U Saravanan		4:45pm - 5:00pm Redundant Monitoring Strategies for Structural and Geohazard Assessment Using Wireless Tiltmeters and LiDAR on Linked Highway Bridges in Colombia <u>Victor Restrepo</u> , Hector Salazar, Jean Piedrahita	

Thursday, 04|Sept|2025

8:15am 9:15am	Keynote Session III Chair: Werner Lienhart Chair: Markus Krueger	Location HS P1	Stevenson creek experimental dam monitoring centenary: Overview and perspectives of strain sensing and strain-based monitoring of civil structures <u>Branko Glisic</u> The power of optical and SAR imaging for remote monitoring of land and infrastructure <u>Paolo Mazzanti</u>					
Coffee Break Location: Exhibition Area								
9:35am 10:50am	Sp. Session 26-1: Bridge Model Calibration and Validation Using Structural Health Monitoring Data Chair: Ivan Duvnjak Chair: Suzana Ereiz	Location HS P2	Session 27-1: Monitoring applications using InSAR Chair: Antje Thiele Chair: Douglas Thomson	Location HS BE01	Session 28: Smart Embedded Sensors and Non-destructive Test Methods for Quality Control Chair: Markus Krueger Chair: Matthias Rebhan	Location TDK	Session 29: Hazard, Disaster and Damage Detection for Infrastructure Chair: Aftab Mufti Chair: Rolands Kromanis	Location HS AE06
	9:35am - 9:50am Optimizing bridge recalculation: uncertainty in SHM-based recalculation of prestressed concrete bridges <u>Maria Walker</u> , Cedric Eisermann, Jan-Hauke Bartels, Steffen Marx		9:35am - 9:50am InSAR as a Component of Geotechnical Monitoring During Subway Construction in Prague <u>Ivana Hlavacova</u> , Jan Kolomaznik, Juraj Struhar		9:35am - 9:50am An EMI-based approach for Structural Health Monitoring of a Space Reinforced Concrete Frame Structure <u>George M. Sapidis</u> , Maria C. Naoum, Nikos A. Papadopoulos, Maristella E. Voutetaki, Constantin E. Chalioris, Theodoros C. Rousakis		9:35am - 9:50am Study on Methods for Identifying and Evaluating Damage to Cross-Sea Bridges Subjected to Ship Collisions Jian Guo, <u>Yuhao Cui</u> , Zheng Wang, Jiahui Wu	
	9:50am - 10:05am Hangar Stressing on the 6th Street Viaduct Replacement, Los Angeles. <u>Paul Thurlow</u>		9:50am - 10:05am Utilizing PSDefoPAT™ to analyze surface deformation of embankment dams <u>Madeline Evers</u> , Antje Thiele		9:50am - 10:05am Tactile Pressure Sensors to analyse Anchor Wall Behaviour in mid-scale Experiments <u>Julian Schleicher</u> , Matthias J. Rebhan, Hans-Peter Daxer, Vera Pamminger, André Arnold, Franz Tschuchnigg		9:50am - 10:05am An automatic system for the rapid post-earthquake safety assessment of bridges <u>Marlon Aguero</u> , Derek Skolnik, Mauricio Ciudad-Real	
	10:05am - 10:20am SHM Application in Development of New Live Load Distribution Factors for Timber Bridges <u>Vidyaadhar Limaye</u> , Philip Vickers, Cyrus Hoseinpour, Amjad Memon, Justin Clarke		10:05am - 10:20am Exploring InSAR Capabilities for Bridge structural health monitoring using TerraSAR-X and Sentinel-1 Data <u>Maciej Kwapisz</u> , Vazul Boros, <u>Karl Heinz Gutjahr</u> , Ivana Hlavacova, Cesar Martinez, Stefan Schlaffer, Juraj Struhar, Alois Vorwagner		10:05am - 10:20am Long term monitoring of the Balladelaan bridge using Smart Aggregates <u>Coen Kortendijk</u> , Anke Hoekstra		10:05am - 10:20am Bridge superstructure vibrational analysis as means to detect scour in a medium span bridge Junhui Zhao, Kareem Helmy, Boris Telehanic, Evangeline Murison, Aftab Mufti, <u>Douglas Thomson</u>	
	10:20am - 10:35am Full-Scale Bridge Testing: Lessons from the Demolition of the Steinavötn Bridge <u>Dórotea H. Sigurðardóttir</u> , Ching Yi Tsai, Guðmundur Valur Guðmundsson		10:20am - 10:35am Satellite-based InSAR for monitoring and safeguarding high-voltage power pylons amid the energy transition <u>Markus Dörfler</u> , Markus Keuschnig, Ingo Hartmeyer		10:20am - 10:35am Structural health monitoring of composite plate using piezoelectric transducer <u>Thanh Canh Huynh</u>		10:20am - 10:35am 2D sonar techniques for monitoring the canal bed morphology of entrances to navigation locks Mohsen Bastani, <u>Rolands Kromanis</u>	
	10:35am - 10:50am Advancing high-fidelity digital Twin Technology for Structural Health Monitoring <u>Ihar Antonau</u> , Suneth Warnakulasuriya, Talhah Ansari, Roland Wüchner, Rainald Löhner, Facundo Nicolas Airaudó, Habir Antil		10:35am - 10:50am Remote sensing for stability assessment of river bridges: Case study of the Red River Bridge in Winnipeg, Canada <u>Daniel Cusson</u> , Helen Stewart, Chaouki Regoui, Junhui Zhao, Karim Helmi, Boris Telehanic, Evangeline Murison, Doug Thomson, Aftab Mufti, Shawn Clark					
Coffee Break Location: Exhibition Area								
11:10am 12:25pm	Sp. Session 26-2: Bridge Model Calibration and Validation Using Structural Health Monitoring Data Chair: Suzana Ereiz Chair: Ivan Duvnjak	Location HS P2	Session 27-2: Monitoring applications using InSAR Chair: Madeline Evers Chair: Vera Costantini	Location HS BE01	Session 30: SHM of Tendons and Pipelines Chair: Ivan M. Diaz Chair: Dong-Jin Yoon	Location TDK	Session 31: System-level SHM and Emerging Technologies Chair: Yara Lorena Rossi Chair: Jayamanne Mudalige Oshadee Jayamanne	Location HS AE06
	11:10am - 11:25am Advancing high fidelity finite element model updating using cooperative game theory: a novel framework for structural optimization <u>Suzana Ereiz</u> , Ivan Duvnjak, Javier Fernando Jiménez-Alonso, Marko Bartolac, Janko Koščak, Domagoj Damjanović		11:10am - 11:25am Potential of InSAR for Structural Health Monitoring of Flood Protection Systems <u>Vazul Boros</u> , Maciej Kwapisz, <u>Petr Dohnalík</u> , Philip Leopold, Alois Vorwagner, Antje Thiele, Madeline Evers		11:10am - 11:25am On-Line Health Monitoring of Underground Pipelines by Source Localization of Leak Damages <u>Dong-Jin Yoon</u> , Sun-Ho Lee, Choon-Su Park		11:10am - 11:25am Exploration of edge computing for monitoring a four-story building frame model <u>Qing-Chen Tang</u> , Emil Kool, Daniel Colmenares, Imane Bayane, Raid Karoumi	
	11:25am - 11:40am Efficacy of decoupling techniques to extract the static strain response from the dynamic response of a bridge under a moving vehicle using low pass filter <u>Sarath R.</u> , Saravanan U.		11:25am - 11:40am ISABHEL (Integrated SAtellite and ground-based monitoring for Bridge Health Lifetime assessment) <u>Vera Costantini</u> , Bernardino Chiaia, Marco Civera, Alberto Ciavattone, Davide Ambrosio, Carlo Ranalletta, Emanuele Del Monte, Roberta Marini		11:25am - 11:40am Effects of grout-strand interface modelling on the degradation of external grouted post-tensioning tendons <u>Belen Vecino</u> , Carlos M.C. Renedo,Luis Chillitupa-Palomino, Iván M. Diaz		11:25am - 11:40am On the use of 6C seismic station for bending-to-shear and torsional building response assessment. <u>Yara Lorena Rossi</u> , Philippe Guéguen, Felix Bernauer, Kate Huihsuan Chen, Chin-Jen Lin, Chin-Sang Ku, Yaochieh Chen	
	11:40am - 11:55am Laboratory Testing of Old Bridge Girders: Preliminary Results <u>Maja Kreslin</u> , Andrej Anžlin, Mirko Kosić, Doron Hekić, Petra Triller		11:40am - 11:55am Smart Geotechnical Asset Management (SGAM): Enhancing predictive maintenance with data-driven insights and Earth Observation technologies Alessandro Brunetti, Maria Elena Di Renzo, Michele Gaeta, Paolo Mazzanti, Giandomenico Mastrantonì, Emanuela Valerio, <u>Vera Costantini</u>		11:40am - 11:55am Autonomous peak-picking procedure for tension force estimation in cables and external post-tensioning tendons Luis Chillitupa-Palomino, Carlos M.C. Renedo, Jaime H. Garcia-Palacios, <u>Iván M. Diaz</u>		11:40am - 11:55am Integration of seismic interferometry and system identification techniques for real-time structural health monitoring: Automated detection of shear-wave velocity changes using skyscraper data for validation Erol Kalkan, <u>Mohammad AlHamaydeh</u> , Weiping Wen	
	11:55am - 12:10pm Investigation of the causes of the unusual gap between the bridge and abutment using long-term monitoring <u>Sunao Iwabuchi</u> , Tomohisa Takehara, Yasunori Miyamori, Takanori Kadota, Yoichi Hinata, Toshiyuki Oshima				11:55am - 12:10pm Field monitoring and mitigation for high-mode vortex-induced vibrations of cables in cable-stayed bridges <u>Yuxuan Yan</u> , Xin Wang, Hao Hu, Hua Guan, Kai Wang		11:55am - 12:10pm Experimental assessment of GNSS-smartphone performance in monitoring dynamic motion <u>Panagiotis Psimoulis</u> , Chenyu Xue, Mudalige Oshadee Jayamanne Jayamanne, Guangcai Li, Jianghui Geng	

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	12:10pm - 12:25pm Monitoring the dynamic sensitivity of the Solkan footbridge to user-induced excitation <i>Mirko Kosić</i> , Doron Hekić, Izabela Drygala		12:10pm - 12:25pm Field Application of TFC-based Electromagnetic Sensors for Monitoring Cross-sectional Loss in Tendons of Bridges <i>Joo-Hyung Lee</i> , Kwang-Yeun Park, Ji-Young Choi, Sanho Lee, Changbin Joh	12:10pm - 12:25pm Identification of Structural Dynamic Loads- From Physical Methods to Physics Informed Deep Learning Paradigm <i>Ying Lei</i> , Lijun Liu, Fubo Zhang			
12:25pm - 1:40pm	Lunch Break Location: Exhibition Area						
1:40pm - 2:55pm	Sp. Session 32: The SCSHM Benchmark bridge: first studies and results Chair: Maria Pina Limongelli Chair: Douglas Thomson	Location HS P2	Session 33: SHM of Tall and Historic Buildings Chair: Lidija Špiranec Chair: Jiayi Zheng	Location HS BE01	Session 34: Implementation and Digitalization in SHM Chair: Michael Olipitz Chair: Max Fiedler	Location TDK	
	1:40pm - 1:55pm Multi-purpose bridge strain data fusion for BWIM and structural monitoring <i>Tommaso Panigati</i> , Maria Pina Limongelli		1:40pm - 1:55pm Study of semi-rigid joints effect on global stiffness of space steel structure based on monitoring data <i>Cheng Yuan</i> , Wei Lu, Jun Teng, Weihua Hu		1:40pm - 1:55pm Digitalization of existing measurement equipment as a valid basis for monitoring and structural behaviour <i>Stefan Burtscher</i> , Peter Huber, Morris Tutschku, Markus Schuch, Florian Scharinger, Matthias Rebhan		
	1:55pm - 2:10pm Vehicle speed estimation using convoluted reciprocity for bridge structural monitoring <i>Daniel Cantero</i>		1:55pm - 2:10pm Sustaining vertical giants: Autonomous monitoring solutions for the construction and lifecycle of tall buildings <i>Lidija Špiranec</i>		1:55pm - 2:10pm Increasing the value of bridge SHM data by leveraging network-level open data <i>Paul R.A. Fidler</i> , Sam Cocking, Farhad Huseynov, Miguel Bravo Haro, Pedro Ubeda Luengo, Campbell R. Middleton, Jennifer M. Schooling		
	2:10pm - 2:25pm Physics-Informed Surrogate Modeling of the SCSHM Benchmark <i>Eray Temur</i> , Maria Pina Limongelli		2:10pm - 2:25pm Multi-scale digital twin for a high-rise structure combining ANN and monitoring data <i>Hetian Shao</i> , Wei Lu, Wenchang Zheng, Weihua Hu, Jun Teng, Eric M. Lui		2:10pm - 2:25pm A comprehensive workflow for digitizing and determining condition indicators for bridge and building construction <i>Michael Olipitz</i> , Roland Jung		
	2:25pm - 2:40pm Vibrational analysis of the benchmark data set <i>Douglas Thomson</i>		2:25pm - 2:40pm Assessment method for torsional performance of high-rise buildings based on period ratio <i>Jiayi Zheng</i> , Wei Lu, Weihua Hu, Jun Teng		2:25pm - 2:40pm Principles and case study of IMSGeo: Automatic displacement monitoring system for construction sites <i>Janina Zaczek-Peplinska</i> , Maria Kowalska, Lech Saloni		
Coffee Break Location: Exhibition Area							
3:15pm - 3:45pm	Closing Ceremony Chair: Werner Lienhart Chair: Markus Krueger	Location HS P1					

Friday, 05|Sept|2025 - Half Day Tours

Tour 2: Testing and Calibration Facilities of TU Graz

Schedule

Meeting point:

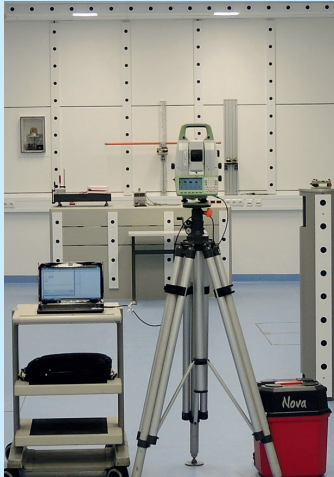
08:30am

Ground floor Graz

University of Technology,
Steyrergasse 30, 8010 Graz

Scientific lead:

Prof. Dr. Werner Lienhart



This technical tour leads to the geodetic measurement lab where monitoring instruments like total stations, laser scanner, fiber optic sensors etc. are tested and calibrated. In the second part of the tour we will visit the hydraulic engineering lab with its simulation and test facilities.

Tour 4: Potential applications and limitations of wireless monitoring

Schedule

Meeting point:

08:20am

Structural Engineering
Centre, North entrance,
Inffeldgasse 24, 8010 Graz

Scientific lead:

Prof. Dr. Markus Krüger
Dr. Stefan Burtscher
Dipl.-Ing. Michael
Petschacher



In this workshop you will learn about the technical possibilities and limitations of wireless monitoring systems to address relevant issues in structural monitoring. This ranges from the selection of measurement methodology, sensors and wireless data transmission technologies to aspects of sensor calibration and data processing and visualisation. Practical applications for different scenarios are presented.

Friday, 05|Sept|2025 - Full Day Tours

Tour 1: Tunnel Research Center

Schedule

Meeting point:

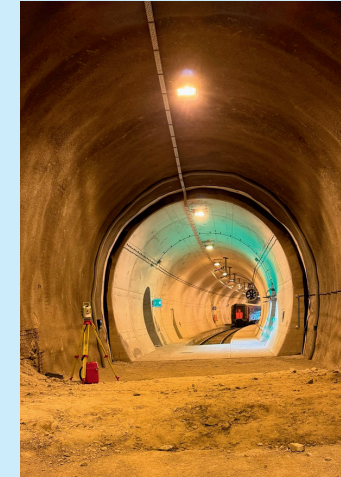
08:00am

Parking lot at Graz

University of Technology,
Steyrergasse 30, 8010 Graz

Scientific lead:

Dipl.-Ing. Lisa Strasser
Dipl.-Ing. Andrea Agreiter



The tunnel research center Zentrum am Berg (ZAB) is a unique research for all aspects in tunnelling from construction to operation and maintenance. The whole day field trip concentrates on the structural health monitoring of new and existing tunnels. We will visit the four tunnel tubes of the research center and make a ride in an old mining truck.

Tour 3: Technical Tour 3: Active Monitoring Site: Subway construction Vienna

Schedule

Meeting point:

08:00am

Parking lot at Graz

University of Technology,
Steyrergasse 30, 8010 Graz

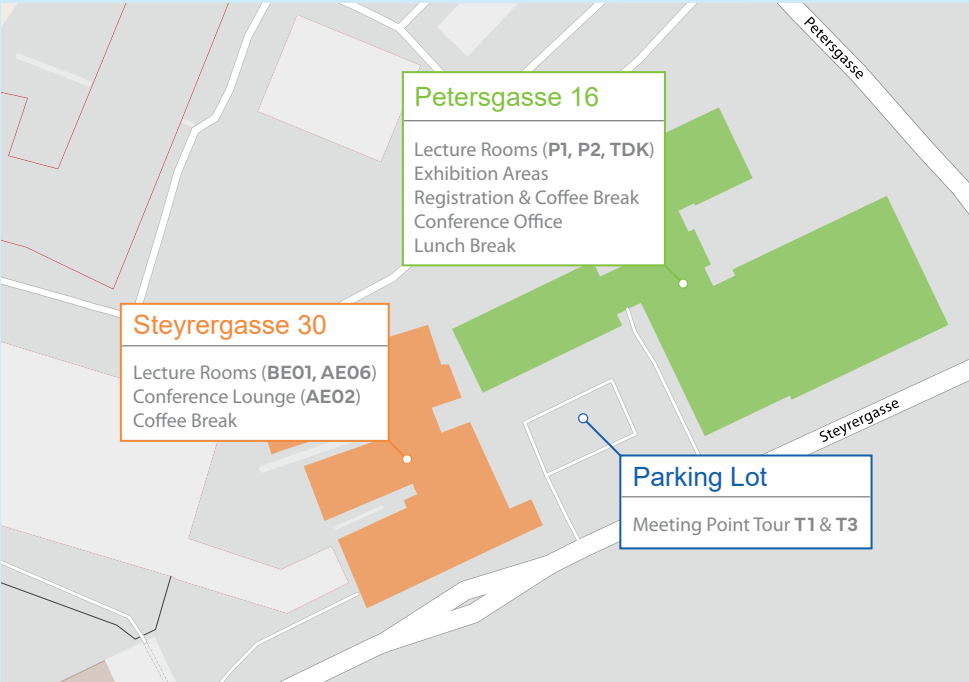
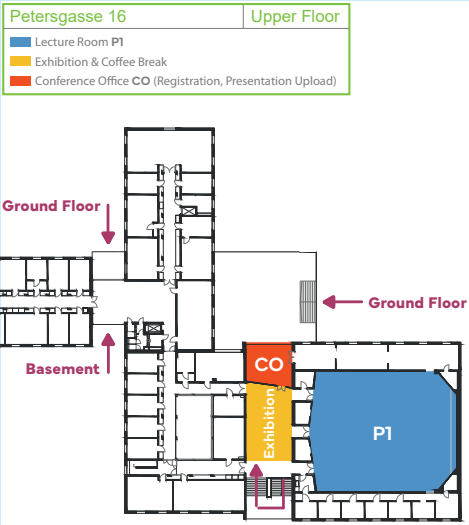
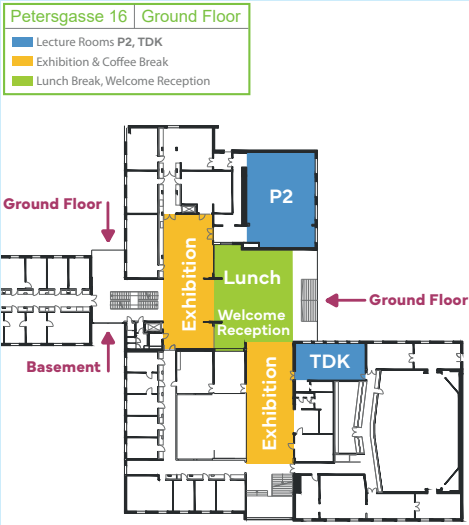
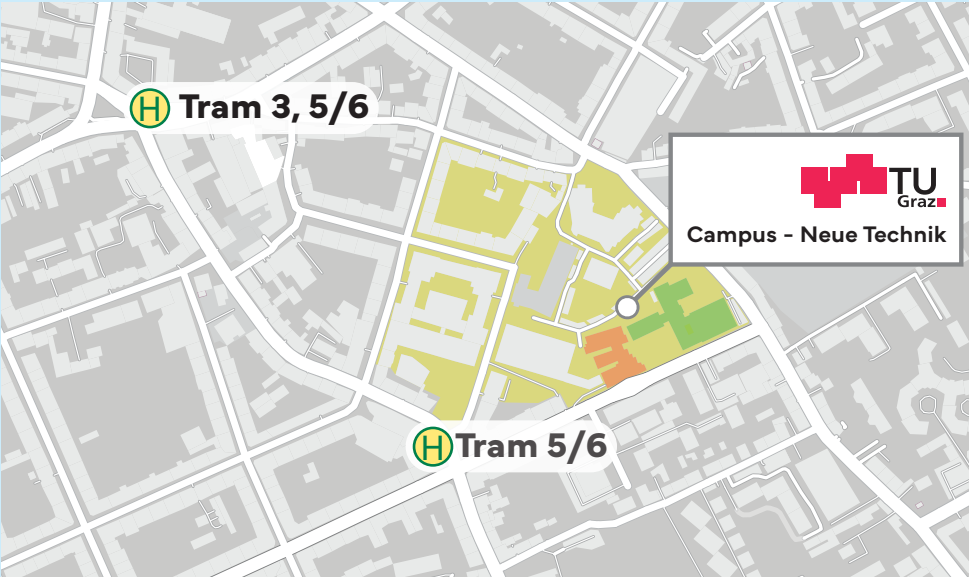
Scientific lead:

Dipl.-Ing. Thomas Moser
Dr.techn. Helmut Woschitz



This tour will lead to monitoring sites of the subway lines in Vienna. We will visit the above ground and underground monitoring installation at two access points.

Maps



The nerves of your structure

Distributed fiber-optic sensing solutions for energy, geotechnics and smart infrastructure



Geotechnical and structural engineering



Renewable energy



Power cables



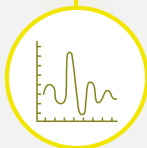
Mining and Nuclear waste



Pipelines and Boreholes



Scientific Research



Leica GeoMoS Edge: Monitor without data gaps.

Leica GeoMoS Edge is a monitoring software for autonomous sensor control and uninterrupted data logging in the field. It allows for measurements to be continuously taken and temporarily stored. Even when communication to the office is disrupted, sensors will continue to perform measurement cycles and transmit data once communication is restored – ultimately preventing data gaps. Setup in the field has gotten much faster now, you will be able to do it without the help of an expert. In addition, individual sensors can be stopped for configuration purposes without stopping entire measurement cycles. #NoDataGaps

leica-geosystems.com/GeoMoS-Edge

