



*1st European Conference of the European  
Association on Quality Control  
of Bridges and Structures*

# EUROSTRUCT 2021

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**TECHNICAL  
PROGRAMME**



**EUROSTRUCT**



Monday 30/08/21- h. 9.30-10.30

	Room LUNA	Room EUROPA	Room GANIMEDE	Room PANORAMA
Session <b>1</b>	<b>Damage detection in existing bridges</b>	<b>Structural reliability of bridges</b>	<b>Sensors and NDT</b>	
Chair	<b>Carlo Pellegrino</b>	<b>Josè Matos</b>	<b>Irina Stipanovic</b>	
<b>h. 9.30</b>	Evaluation of Post Tensioned Bridges' Tendon Ducts by NDT and Minor Invasive Measures <i>Guy Rapaport</i>	Physics-based probabilistic models for the reliability analysis of bridges <i>Fabrizio Nocera, Armin Tabandeh and Paolo Gardoni</i>	Remote Sensing Measurements for the Structural Monitoring of Historical Masonry Bridges <i>Valerio Gagliardi, Luca Bianchini Ciampoli, Fabrizio D'Amico, Amir Alani, Fabio Tosti and Andrea Benedetto</i>	
<b>h. 9.45</b>	Ambient vibration tests of two prestressed reinforced concrete highway overpasses <i>Carlo Pellegrino, Mariano Angelo Zanini, Flora Faleschini, Filippo Andreose, Klajdi Toska, Lorenzo Hofer, Paolo Zampieri and Gianantonio Feltrin</i>	Seismic reliability assessment of an open-spandrel reinforced concrete arch bridge <i>Klajdi Toska, Mariano Angelo Zanini, Gianantonio Feltrin, Lorenzo Hofer and Carlo Pellegrino</i>	Quantification of uncertainties for geodetic observations in the context of bridge surveillance <i>Matthias Haslbeck, Thorsten Strübing and Thomas Braml</i>	
<b>h. 10.00</b>	Cost oriented object-related damage analysis with the Ultrasonic method for small steel bridges <i>Thomas Krausche and Hartmut Pasternak</i>	Simulation-based Life-Cycle Structural Reliability of Deteriorating RC Bridges using Bayesian Updating <i>Mehmet Yilmaz, Mattia Anghileri, Luca Capacci and Fabio Biondini</i>	Design of the data transmission component of a micrometre scale chloride ion sensor embedded inside a concrete structure <i>Stephen Sammut, Edward Gatt and Ruben Paul Borg</i>	
<b>h. 10.15</b>	<i>Structural Health Monitoring at the Heart of the Decision-Making Process for Structural Asset Management</i> <i>Patrice Marc Pelletier, Francois-Baptiste Cartiaux and Valeria Fort</i>	Canakkale 1915 Bridge Seismic protection of the world longest suspension bridge <i>Samuele Infanti and Gian Paolo Colato</i>	BiNet: Bridge Visual inspection dataset and approach for damage detection <i>Zaharah A. Bukhsh, Andrej Anzlin and Irina Stipanovic</i>	



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Session <b>2</b>	<b>Structural Health Monitoring for informed management of roadway bridges: the experience of the Regione Lombardia project (special session)</b>	<b>Digital Twin for Monitoring</b>	<b>Monitoring systems and predictive models for the risk assessment of bridges (special session)</b>	<b>Structural Health Monitoring (special session)</b>
Chair	<b>Maria Pina Limongelli</b>	<b>Joan Casas</b>	<b>Francesco Morelli</b>	<b>Eleni Chatzi</b>
<b>h. 11.00</b>	The MoRe guidelines for monitoring of transport infrastructures <i>Maria Pina Limongelli, Carmelo Gentile, Francesco Ballio, Marco Belloli, Marco Di Prisco, Fabio Biondini, Ferruccio Resta, Paola Vigo and Aldo Colombo</i>	Mathematical modelling of the future built environment: an indicator-based approach <i>Alessandro Contento, Jessica Boakye, Paolo Gardoni, Alessandro Marucci and Lorena Fiorini</i>	Autonomous IoT for Condition Monitoring, Assessment and Predictive Maintenance <i>Stefan Burtscher, Peter Huber, Stefan Wiesinger and Fritz Binder</i>	An automated machine learning-based approach for structural novelty detection based on SHM <i>Nicolas Manzini, Ndeye Mar, Franziska Schmidt, Jean-François Bercher, André Orcesi, Pierre Marchand, Julien Gazeaux and Christian Thom</i>
<b>h. 11.15</b>	Load testing and structural monitoring of a reinforced concrete mid-century bridge <i>Giulio Zani, Agnese Scalbi, Katherina Flores Ferreira, Claudio Somaschini and Marco di Prisco</i>	<i>An example of digital twins for bridge monitoring and maintenance: preliminary results</i> <i>Chenyu Zhou, Dahai Xiao, Jianghan Hu, Yuntao Yang, Binbin Li, Simon Hu, Cristoforo Demartino and Mark Butala</i>	The structural risk assessment of existing bridges in Tuscany (Italy) a quick survey-based method <i>Giovanni Buratti, Antonella Cosentino, Francesco Morelli, Vincenzo Messina, Walter Salvatore, Simone Celati, Isabella Mazzatura and Domenico Gaudioso</i>	Utilization of computer vision technique for automated crack detection based on UAV-taken images <i>Ali Mirzazade, Maryam Pahlavan Nodeh, Cosmin Popescu, Björn Täljsten and Thomas Blanksvärd</i>
<b>h. 11.30</b>	Monitoring reinforced concrete arch bridges with operational modal analysis <i>Paolo Borlenghi, Carmelo Gentile and Giacomo Zonno</i>	Evaluation of a Novel Root Mean Square Noise Filtering for Low-Cost Structural Health Monitoring Applications <i>Seyedmilad Komarzadehasl, Behnam Mobaraki, Jose Antonio Lozano-Galant and Jose Turmo</i>	Assessment of the residual prestressing force in existing bridges through the X-ray diffractometer <i>Francesco Chichi, Massimo Gammino, Daniele Maestrini, Gianpaolo Marconi, Francesco Morelli, Michele Mori, Ivan Panzera, Andrea Piscini and Walter Salvatore</i>	Magnetic and electromagnetic testing of suspension cables of bridges and structures <i>Dmitry Slesarev and Alexej Semenov</i>
<b>h. 11.45</b>	Satellite-based Structural and Hydraulic Monitoring of a 50-year-old Bridge over the Oglio River in Italy <i>Silvia Bianchi, Fabio Biondini, Manuel D'Angelo, Francesco Ballio, Mattia Anghileri, Gianpaolo Rosati and Gabriele Cazzulani</i>	<i>Monitoring of reinforced concrete structures by Distributed Optical Fiber Sensors</i> <i>Mattia Bado and Joan Casas</i>	Fast and Robust Structural Damage Analysis of Civil Infrastructure Using UAV Imagery <i>Alon Oring</i>	Acoustic emission and ultrasonic monitoring of a prestressed concrete bridge in its final years <i>Ernst Niederleithinger, Christian Sodeikat, Niklas Epple, Chun-Man Liao and Iris Hinderstmann</i>
<b>h. 12.00</b>	Structural Health Monitoring of Two Road Bridges in Como, Italy <i>Silvia Bianchi, Fabio Biondini, Gianpaolo Rosati, Mattia Anghileri, Luca Capacci, Gabriele Cazzulani and Lorenzo Benedetti</i>	Standardisation in monitoring, safety assessment and maintenance of the transport infrastructure: current status and future perspectives <i>Agnieszka Bigaj-van Vliet, Diego Lorenzo Allaix, Jochen Köhler and Elena Scibilla</i>	Arch Concrete Bridge Risk-Based Assessment Using a Portuguese Case Study <i>Edward Baron and Jose Matos</i>	<i>Scour Repair of Bridges through Vibration Monitoring and Related Challenges</i> <i>E. Alexandra Micu, Muhammad Arslan Khan, Basuraj Bhowmik, Miguel Casero Florez, Eugene Obrien, Cathal Bowe and Vikram</i>
<b>h. 12.15</b>	Continuous monitoring of masonry arch bridges to evaluate the scour action <i>Paolo Borlenghi, Manuel D'Angelo, Francesco Ballio and Carmelo Gentile</i>	KPI for bridge management. A first step for bridge digitalization <i>Felipe Collazos Arias, David Garcia-Sánchez and Álvaro Gaute-Alonso</i>	Damage detection of post-tensioned cables in existing bridges with Digital Radiography <i>Raoul Davide Innocenzi, Giulia Pigliapoco, Sandro Carbonari, Fabrizio Gara and Luigino Dezi</i>	Innovative strengthening of road bridges with Iron-based shape Memory Alloys (Fe-SMA) <i>Jakub Vůjtěch, Pavel Ryjáček, Elyas Ghafoori and José António Campos E Matos</i>



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<b>Session</b> <b>3</b>	<b>Advances of the BRIDGE 50 Research Project: Residual Structural Performance of a 50-Year-Old PC Bridge (special session)</b>	<b>Testing, monitoring and digital twinning to assess the structural condition of existing bridges (special session)</b>	<b>Structural Deterioration and the Value of Information (special session)</b>	<b>Corrosion protection for concrete and steel bridges (special session)</b>
<b>Chair</b>	<b>Fabio Biondini</b>	<b>Carmelo Gentile</b>	<b>Paolo Gardoni</b>	<b>Martin van Leeuwen</b>
<b>h. 14.45</b>	Residual Structural Performance of Existing PC Bridges: Recent Advances from the BRIDGE 50 Research Project <i>Fabio Biondini, Francesco Tondolo, Sergio Manto, Carlo Beltrami, Miriam Chiara, Barbara Salza, Matteo Tizzani, Bernardino Chiaia, Alessandro Lencioni, Luigi Panseri and Luigi Quaranta</i>	A simplified model for the reliability assessment of existing concrete girders in the perspective of digital twinning <i>Angelo Aloisio, Alessandro Contento, Rocco Alaggio and Massimo Fragiacomo</i>	Condition Assessment of a First Generation Precast Prestressed Bridges in Slovakia <i>Petra Bujřáková, Martin Moravčík and Jakub Kralovanc</i>	Prolonging the Lifetime of Existing Reinforced Concrete Infrastructures with Thermal Sprayed Zinc Coating Anodes <i>Martin van Leeuwen, Martin Gagné, Bernardo Duran and Frank Prenger</i>
<b>h. 15.00</b>	Non Destructive Testing and Model Validation of Corroded PC Bridge Deck Beams <i>Mattia Anghileri, Pierclaudio Savino, Luca Capacci, Silvia Bianchi, Gianpaolo Rosati, Francesco Tondolo and Fabio Biondini</i>	Application of different methods for determination of DAF from moving loads on roadway reinforced concrete bridges <i>Dejan Janev, Toni Arangjelovski, Darko Nakov and Goran Markovski</i>	Structural and durability assessment of heritage reinforced concrete structures <i>András Dormány and Zoltán Orbán</i>	Sustainable and durable corrosion protection for the "Bridge of the Century" <i>Frank Prenger and Hans-Bernd Pillkahn</i>
<b>h. 15.15</b>	On-site corrosion characterization of 50-year-old PC deck beams <i>Maddalena Carsana, Fabio Biondini, Elena Redaelli and Davide Ottavio Valoti</i>	From Uncertainty in Measurement to Certainty in Bridge Reassessment <i>Stefan Küttenbaum, Thomas Braml, Alexander Taffe and Stefan Maack</i>	Identifying barriers of Implementing BIM in Construction <i>Mohammad Amin Oyarhossein and Kasra Mostofi</i>	Zinc Spray galvanizing: technological improvement in the arc-spray technology, new Zn alloys. Thermal spraying process for a long-lasting life of steel against corrosion. <i>Mario Colica</i>
<b>h. 15.30</b>	Experimental Program and Full-Scale Load Tests on PC Deck Beams <i>Francesco Tondolo, Fabio Biondini, Donato Sabia, Gianpaolo Rosati, Bernardino Chiaia, Antonino Quattrone, Pierclaudio Savino and Mattia</i>	Serviceability assessment of a lively footbridge using conventional sensors and microwave remote sensing <i>Carmelo Gentile</i>	A Renewal Theory Formulation for the Quantification of the Benefits of Structural Health Monitoring <i>Leandro Iannacone, Pier Francesco Giordano, Paolo Gardoni and Maria Pina Limongelli</i>	Accelerated Corrosion Test to Study Atmospheric Corrosion on Steel Girder Bridges <i>Luis Miguel Moran Yañez</i>
<b>h. 15.45</b>	Nonlinear Structural Analysis of Corroded PC Bridge Deck Beams <i>Mattia Anghileri and Fabio Biondini</i>	Some considerations on the expected resonance frequencies of bridges during proof load tests <i>Sandro Carbonari, Riccardo Martini, Vanni Nicoletti, Davide Arezzo and Fabrizio Gara</i>	Effects of corrosion in the structural capacity of concrete deck bridges with steel or prestressed concrete girders <i>Leonardo Cifuentes, Mauricio Pradena and Patricio Cendoya</i>	Optimizing cover rebuilding maintenance for reinforced concrete structures exposed to chloride attack <i>Quynh Chau Truong, Charbel-Pierre El Soueidi, Emilio Bastidas-Arteaga and Yue Li</i>
<b>h. 16.00</b>	Dynamic Identification of damaged PC Bridge Beams <i>Donato Sabia, Antonino Quattrone, Francesco Tondolo and Pierclaudio Savino</i>	Contactless measuring systems for structural health monitoring of bridges <i>Tanja Kebig, Nils Olbermann, Michél Bender, Arno Zürbes and Stefan Maas</i>	Influence of bridge deterioration on its natural frequencies and serviceability <i>Matías Torres, Leonardo Cifuentes, Mauricio Pradena and Peter Dechent</i>	Norwegian Experience with Zinc Thermal Spraying for Bridges <i>Ole Øystein Knudsen, Håkon Matre, Knut Ove Dahle, Martin Gagné, Kristian Ringheim Moe, Karsten Tranborg Eriksen and Henrik Rødal Ler</i>
<b>h. 16.15</b>	Digitalization Processes and Bridge Information Modeling for Existing Bridges <i>Daniel Polonia Rodríguez, Francesco Tondolo, Anna Osello, Arianna Fonsati, Carlo De Gaetani, Claudio Trincianti and Dorian Gazzulli</i>			



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Session <b>4</b>	<b>Condition monitoring and assessment of degrading reinforced concrete structures (special session)</b>	<b>Testing, monitoring and digital twinning to assess the structural condition of existing bridges (special session)</b>	<b>Modelling and assessment of structures and infrastructures subject to extreme loading actions (special session)</b>	<b>Bridge Condition Assessment</b>
Chair	<b>Fritz Binder</b>	<b>Carmelo Gentile</b>	<b>Fabio Di Trapani</b>	<b>Mariano Angelo Zanini</b>
<b>h. 16.45</b>	Diagnostics and Evaluation of Bridge Structures on Cogwheel Railway <i>Peter Koteš, Martin Vavruš and Martin Moravčík</i>	On the use of SAR data for structural monitoring of bridges: the case of Albiano-Magra Bridge in Italy <i>Elisabetta Farneti, Nicola Cavalagli, Ilaria Venanzi, Mario Costantini, Francesco Trillo, Federico Minati and Filippo Ubertini</i>	Are bridges safe under near-fault pulse-type ground motions considering the vertical component? <i>Matin Jami, Said Elias, Rajesh Rupakhetty, Dario De Domenico, Giovanni Falsone and Giuseppe Ricciardi</i>	Bridge Condition Assessment using Supervised Decision Trees <i>Silvia Bianchi and Fabio Biondini</i>
<b>h. 17.00</b>	Concept to assess the performance on degrading concrete structures components <i>Fritz Binder and Stefan L. Burtscher</i>	Introducing an Accurate Low-Cost Accelerometer for Structural Health Monitoring of Bridges <i>Seyedmilad Komarizadehasl, Behnam Mobaraki, Jose Antonio Lozano-Galant and Jose Turmo</i>	Estimation of structural fire vulnerability through fragility curves <i>Enrico Cardellino, Donatella De Silva and Emidio Nigro</i>	A survey of bridge condition rating systems <i>Chiara Iacovino, Zehra Irem Turkeszer, Pier Francesco Giordano and Maria Pina Limongelli</i>
<b>h. 17.15</b>	Provisional measures for guaranteeing the functionality of existing bridges: the Agnena Bridge in Caserta Province <i>Mattia Zizi, Pasquale Bencivenga and Gianfranco De Matteis</i>	Framework for Bridge Management Systems (BMS) using Digital Twins <i>Vanessa Saback de Freitas Bello, Cosmin Popescu, Thomas Blanksvärd and Björn Täljsten</i>	Seismic retrofitting of prestressed concrete bridges through friction pendulum isolation bearings <i>Dario De Domenico, Silvia Sciutleri, Antonio D'Arrigo and Giuseppe Ricciardi</i>	Structural health monitoring of steel bridges by machine vision: Image processing <i>Foad Kazemi Majd, Nasim Fallahi and Vincenzo Gattulli</i>
<b>h. 17.30</b>	Remote inspection and monitoring of civil engineering structures based on Unmanned Aerial Vehicles <i>Rafael Cabral, Diogo Ribeiro, Ricardo Santos and Anderson Shibasaki</i>	Condition monitoring of external prestressing tendons on a concrete multi-span highway viaduct <i>Andrej Anžin, Ratko Švraka, Doron Hekić and Uroš Bohinc</i>	A comparison of CFRP retrofitted columns under lateral impact loads with different boundary conditions <i>Sicheng Zhou, Cristoforo Demartino and Yan Xiao</i>	Bridge Management System Based on Cost Action TU1406 Findings <i>Matej Kušar and Aleksander Srdić</i>
<b>h. 17.45</b>	Convolution neural network-based machine learning approach for visual inspection of concrete structures <i>Ravi Patel, Lucas Steinmann, Jonas Fehrenbach, David Fehrenbach and Frank Dehn</i>	Theoretical and Experimental Assessment of Indirect Dynamic Measurements for Periodic Inspections of Road Bridges <i>Stefano Ercolessi, Giovanni Fabbrocino, Danilo Gargaro and Carlo Rainieri</i>	Dynamic response of infilled frames subject to accidental column losses <i>Fabio Di Trapani, Giovanni Tomaselli, Antonio Pio Sberna, Marco Martino Rosso, Giuseppe Carlo Marano, Liborio Cavaleri and Gabriele Bertagnoli</i>	<i>Modal characterization of a prestressed reinforced concrete bridge composed by decks with different ages</i> <i>Carlo Pellegrino, Mariano Angelo Zanini, Flora Faleschini, Filippo Andreose, Klajdi Toška, Lorenzo Hofer, Paolo Zampieri and Gianantonio Feltrin</i>
<b>h. 18.00</b>	Application of Petri nets to manage bridge decks <i>Cláudia Ferreira, Luis Neves, José Campos E Matos and Ana Silva</i>	<i>Resiliency Assessment of Existing Bridges – A Methodology to Guide the Rehabilitation of a Cantilever Bridge Opened in 1930</i> <i>Guy Larose, Pierre-Olivier Dallaire, Theresa Erskine, Emanuele Mattiello and Chiara Pozzuoli</i>	Development of a Steel Fiber-reinforced Rubber Concrete for Jacketing of Bridge Piers against Vehicular Impacts: Preliminary Results <i>Dade Lai, Lan Lin, Xiaoyu Yan, Zitong Li, Keqin Xu, Cristoforo Demartino and Yan Xiao</i>	Numerical analysis of cable-stayed bridges under blast loading <i>Cyrille Denis Tetougueni, Paolo Zampieri and Carlo Pellegrino</i>



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<b>Session</b> <b>5</b>	<b>Risk management and classification of road bridges (special session)</b>	<b>Digitalization in bridge monitoring</b>	<b>Masonry arch bridges: Diagnostic, monitoring, structural assessment and strengthening (special session)</b>	<b>Quality control on green concrete structures (special session)</b>
<b>Chair</b>	<b>Paolo Clemente</b>	<b>Rade Hajdin</b>	<b>Nicola Cavalagli</b>	<b>Amaia Santamaria</b>
<b>h. 11.00</b>	BIM solutions for existing bridges management  <i>Antonella Cosentino, Pietro Baratoro, Silvia Caprioli, Walter Salvatore and Ada Zirpoli</i>	Ontologies as the key for common understanding of infrastructure assets  <i>Dušan Isailović and Rade Hajdin</i>	Fast adaptive limit analysis of masonry arch bridges in presence of differential settlements of bridge piles  <i>Nicola Grillanda, Jacopo Scacco and Gabriele Milani</i>	<i>Thermal and bonding behavior of synthetic thin pavements for concrete bridge decks</i>  <i>Giovanni Giacomello, Andrea Ballelo, Emiliano Pasquini and Marco Pasetto</i>
<b>h. 11.15</b>	Structural risk assessment of existing road bridges according to Italian Guidelines based on a territorial case study  <i>Gianfranco De Matteis, Pasquale Bencivenga and Mattia Zizi</i>	Best practices of Information Modeling of bridges when the BIM use is the Finite Element structural analysis  <i>Paolo Segala</i>	Combined adaptive limit analysis and discrete FE approach for the structural assessment of skew arches  <i>Jacopo Scacco, Nicola Grillanda, Gabriele Milani and Paulo B. Louenço</i>	Behavior of real scale beams manufactured with electric arc furnace slag concrete  <i>Amaia Santamaria, Jesús Maria Romera, Ignacio Marcos, Javier Jesús González and Victor Revilla-Cuesta</i>
<b>h. 11.30</b>	Towards Standardized and Interoperable Platforms for supporting the Seismic Vulnerability Assessment and Seismic Monitoring of Italian Bridges and Viaducts  <i>Paolo Clemente, Sonia Giovinazzi, Maurizio Pollino, Vittorio Rosato, Laura Blaso, Giuseppina Giuliani, Nicoletta Gozo and Chiara Ormando</i>	Utilization of Digital Twins for bridge inspection, monitoring and maintenance  <i>Marcos Massao Futai, Túlio Nogueira Bittencourt, Ruan Richelly Santos, Carlos Roberto Ribeiro Araújo, Duperron Marangon Ribeiro, André Rodrigues Da Rocha and Rosana Ellis</i>	Virtual investigation of masonry arch bridges: digital procedures for inspection, diagnostics, and data management  <i>Giovanni Fabbrocino, Francesca Savini, Adriana Marra and Ilaria Trizio</i>	Environmental Performance Indicators for Roadway and Highway Infrastructures Management  <i>Flora Faleschini and Mariano Angelo Zanini</i>
<b>h. 11.45</b>	The new guidelines of Italian Ministry of Infrastructures for the structural risk classification of existing bridges: genesis, examples of application and practical considerations  <i>Antonella Cosentino, Giovanni Buratti, Francesco Morelli, Walter Salvatore, Simone Celati, Domenico Gaudio and Isabella Mazzatura</i>	<i>BIM Bridge Engineering Workflow with SOFISTIK and Revit on a case study of 3 Motorway bridges on the BAB A3 in Germany</i>  <i>Thomas Braml, Robert Herceg, Emanuele Agostini</i>	Rigid block modelling of a masonry bridge subjected to foundation settlements: a comparison between linear and non-linear kinematic analysis  <i>Raffaele Gagliardo, Giusy Terracciano, Lucrezia Cascini, Francesco Portioli and Raffaele Landolfo</i>	Application of the non-destructive methods to the determination of discontinuities between the bridge steel box girder and concrete  <i>Maria Grozdanić, Dalibor Sekulic and Karla Ille</i>
<b>h. 12.00</b>	<i>Development of a Bridge Management System (BMS) based on the new guidelines of the Italian Ministry of Transportation</i>  <i>Silvia Manarin, Mariano Angelo Zanini, Flora Faleschini and Carlo Pellegrino</i>	Building Information Modeling for Bridge Design and Construction  <i>Yiannis Xenidis</i>	Masonry Arch Bridges in Long-term Operation on Slovak Railway Network  <i>Patrik Kotula and Ondrej Kridla</i>	Development of conformity criteria for diffusion coefficients of concrete and their influence on the service life of reinforced concrete structures  <i>Eline Vereecken, Wouter Botte and Robby Caspeele</i>
<b>h. 12.15</b>	A Model for the Assessment of the Seismic Resilience of Road Networks  <i>Alessandro Rasulo, Angelo Pelle, Camillo Nuti and Bruno Briseghella</i>	Towards automated detection of cracked concrete  <i>Aleš Žnidarič, Maja Kreslin, Andrej Anžlin, Andraž Krivic and Domen Mongus</i>	Evaluation of seismic vulnerability of the historical SS Filippo e Giacomo masonry arch bridge in Ascoli Piceno (Italy)  <i>Graziano Leoni, Fabrizio Gara and Michele Morici</i>	Compressive-strength evaluation of recycled aggregate self-compacting concrete through hammer rebound index  <i>Victor Revilla-Cuesta, Vanesa Ortega-López, Flora Faleschini, Amaia Santamaria and Marta Skaf</i>
<b>h. 12.30</b>		BIM-based organization of inspection data using Semantic Web technology for infrastructure asset management  <i>Liu Liu, Philipp Hagedorn and Markus König</i>		



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Session 6	<b>Risk management and classification of road bridges (special session)</b>	<b>Resilience of infrastructure</b>	<b>Masonry arch bridges: Diagnostic, monitoring, structural assessment and strengthening (special session)</b>	<b>Structural Health Monitoring (special session)</b>
Chair	<b>Silvia Caprili</b>	<b>Fabrizio Gara</b>	<b>Paolo Zampieri</b>	<b>Vikram Pakrashi</b>
h. 14.45	Application of a simplified load rating method for scoring existing bridges: a territorial case study in Basilicata <i>Michele D'Amato and Gianfranco De Matteis</i>	<i>Importance Sampling in Life-Cycle Seismic Fragility and Risk Assessment of Aging Bridge Networks</i> <i>Luca Capacci and Fabio Biondini</i>	Numerical analysis of masonry arch bridges subject to scour effect <i>Federico Di Marco, Tetougueni Cyrille Denis, Paolo Zampieri and Carlo Pellegrino</i>	<i>Innovative Technologies for Structural Health Monitoring of SFTs: Combination of InfraRed Thermography with Mixed Reality</i> <i>Vittorio Palma, Giacomo Iovane, Soonkyu Hwang, Federico M. Mazzolani, Raffaele Landolfo, Beatrice Faggiano and Hoon Sohn</i>
h. 15.00	GENIA: Tool for digitizing the operational flow associated with the main inspections of highway bridges <i>Ignacio Piñero, Leire Garmendia, Amaia Santamaria and Laura Pérez</i>	Resilience-based decision support tool for management of transportation infrastructure <i>Nikola Tanasic and Rade Hajdin</i>	Assessment of masonry bridges with the help of combined NDT methods <i>Zoltán Orbán and András Dormány</i>	Use of Copernicus satellite data to investigate the soil-structure interaction and its contribution to the dynamics of a monitored monumental building <i>Rosario Ceravolo, Stefania Coccimiglio, Giorgia Coletta, Mohamad Dabdoub, Erica Lenticchia and Gaetano Miraglia</i>
h. 15.15	Evolution of design traffic loads for Italian road bridges <i>Pasquale Bencivenga, Giovanni Buratti, Antonella Cosentino, Gianfranco De Matteis, Francesco Morelli, Walter Salvatore and Mattia Zizi</i>	Assessing the resilience of a bridge struck by multiple hazards <i>Lorenzo Hofer and Mariano Angelo Zanini</i>	Rigid-block analysis in large displacements of masonry arches on vertically moving supports <i>Stefano Galassi, Giulia Misseri and Luisa Rovero</i>	Instrumenting an Operational Train for Continuous Monitoring of Bridges and Track <i>E. Alexandra Micu, Eugene Obrien, Cathal Bowe, Favour Osose Okosun, David Morgan and Vikram Pakrashi</i>
h. 15.30	Assessment of inspection procedures for pre-stressed concrete bridges with post-tensioned cables <i>Filippo Latte Bovio, Francesco Chichi, Marco Ciano, Simone Ferrari, Massimo Gammino, Marcello Guelpa, Massimiliano La Porta, Daniele Maestrini, Gianpaolo Marconi, Isabella Mazzatura, Davide Morandi, Francesco Morelli, Michele Mori, Ivan Panzera, Paolo Papeschi, Andrea Piscini and Walter Salvatore</i>	<i>Damage Scenario and Economic Losses Estimation of Historical Earthquakes occurred in Northeastern Italy</i> <i>Lorenzo Hofer and Mariano Angelo Zanini</i>	Discussion on the nonlinear horizontal behavior of a multi-span masonry bridge <i>Paolo Zampieri, Tetougueni Cyrille Denis and Carlo Pellegrino</i>	Water-structure interaction analysis of a segmental bridge using ambient vibration testing at different water levels <i>Wilson Alexander Hernández Sierra, Alvaro Viviescas and Carlos Alberto Riveros Jerez</i>
h. 15.45	The future of bridge inspection and management: the "Autostrade per l'Italia & Movyon" strategy (part I) <i>Marzia Malavisi</i>	Overview of the activities of DICEA in the INTERREG FIRESPILL project <i>Giovanna Xotta, Lorenzo Hofer and Carmelo Maiorana</i>	A study on live load effects in railway backfilled arch bridges <i>Tomasz Kamiński and Czesław Machelski</i>	An experimental study on the sorption in UHPFRC: adaptation of the DVS measurement procedure <i>Xuande Chen, Juliette Triquet, Thomas Sanchez, Madura Pathirage, Luca Sorelli and Gianluca Cusatis</i>
h. 16.00	The future of bridge inspection and management: the "Autostrade per l'Italia & Movyon" strategy (part II) <i>Marzia Malavisi</i>	Metamodel-based Reliability Assessment of Reinforced Concrete Beams Under Fatigue Loads <i>Silvia Juliana Sarmiento Nova, Gabriel Sas, Jaime Gonzalez-Libreros, Lennart Elfgren, Ibrahim Coric and Ola Enoksson</i>	Derivation of fragility curves for the seismic vulnerability assessment of railway masonry arch bridges <i>Carlo Filippo Manzini, Paolo Morandi, Barbara Borzi, Francesco Iodice, Alberto Mauro, Andrea Vecchi and Franco Iacobini</i>	Amplitude dependency effects in the structural identification of historic masonry buildings <i>Panagiotis Martakis, Yves Reuland and Eleni Chatzi</i>



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Session <b>7</b>	<b>Risk management and classification of road bridges (special session)</b>	<b>Retrofitting</b>	<b>Masonry arch bridges: Diagnostic, monitoring, structural assessment and strengthening (special session)</b>	<b>Reinforced Concrete Structures</b>
Chair	<b>Giuseppe Andrea Ferro</b>	<b>Flora Faleschini</b>	<b>Mattia Zizi</b>	<b>Giuseppe Carlo Marano</b>
<b>h. 16.45</b>	Assessment and upgrading of weakly shear reinforced bridge decks: a case study <i>Raoul Davide Innocenzi, Giandomenico Massa, Vanni Nicoletti, Sandro Carbonari, Fabrizio Gara and Luigino Dezi</i>	Refurbish and reinforcement of bridges, viaducts, tunnels: innovative construction methods and materials <i>Giorgio Giacomini</i>	Masonry arch bridges: typical features and structural issues <i>Pasquale Bencivenga, Mattia Zizi and Gianfranco De Matteis</i>	Dynamic compressive behavior of recycled bricks aggregate concrete under SHPB tests <i>Beibei Xiong, Cristoforo Demartino, Giuseppe Carlo Marano, Fabio Di Tranpani, Jinjun Xu and Yan Xiao</i>
<b>h. 17.00</b>	La Reale viaduct collapse: a lesson to improve the effectiveness of inspections of segmental post-tensioned bridges and viaducts <i>Giuseppe Andrea Ferro, Luciana Restuccia, David Falliano, Achille Devitofranceschi and Angelo Gemelli</i>	Rapid repair of damaged RC columns through CFRM confinement <i>Klajdi Toska, Flora Faleschini, Mariano Angelo Zanini, Lorenzo Hofer and Carlo Pellegrino</i>	Numerical investigation of a Medieval masonry arch bridge based on a discrete macro-element modeling approach <i>Luca Penazzato, Daniel V. Oliveira, Davide Rapicavoli, Paolo Zampieri, Paulo B. Lourenço, Ivo Calió and</i>	Reliability-targeted behaviour factor evaluation for code compliant RC Italian frames <i>Mariano Angelo Zanini and Gianantonio Feltrin</i>
<b>h. 17.15</b>	Influence of the deck length on the fragility assessment of Italian r.c. link slab bridge <i>Lucia Minnucci, Fabrizio Scozzese, Andrea Dall'Asta, Sandro Carbonari and Fabrizio Gara</i>	Field investigation on the reinforcing steel corrosion of RC infrastructures in Abruzzo <i>Ferdinando Totani, Angelo Aloisio, Danilo Ranalli and Gianfranco Totani</i>	The effect of the associative friction in the seismic limit analysis of masonry arches with uncertain geometry <i>Paolo Zampieri, Ludovico Rossi, Nicola Cavalagli, Vittorio Gusella and Carlo Pellegrino</i>	Seismic reliability and cost analysis of code compliant RC Italian frames <i>Mariano Angelo Zanini and Gianantonio Feltrin</i>
<b>h. 17.30</b>	The SHM as Higher Level Inspection in the Evaluation of Structures <i>Chiara Ormando, Farnaz Raeisi, Paolo Clemente and Aftab Mufti</i>	FRM-confined concrete: influence of cross-section geometry on cyclic stress-strain behavior <i>Klajdi Toska and Flora Faleschini</i>	Determining and tuning models of a masonry bridge for structural assessment <i>Paolo Borlenghi, Antonella Saisi and Carmelo Gentile</i>	Methodology for the study of pre-stressed concrete bridges affected by alkali-silica reaction <i>Ismael Carpintero, Eduardo López, Jorge Rueda and Victor Lanza</i>
<b>h. 17.45</b>	Monitoring-based decision support system for risk management of bridge scour <i>Enrico Tubaldi, Andrea Maroni, Daniele Zonta and Hazel McDonald</i>	Extending the Lifecycle of Damaged Structure by Retrofitting New Bridge Design Concepts in Old Structures <i>Alexander Jiponov and Vasil Nikolov</i>	The Somigliana's Double Dislocation method for the calculation of the live loads collapse multiplier of masonry arch bridges <i>Giuseppe Stagnitto, Roberto Siccardi and Massimiliano Ghioni</i>	Uniform and local corrosion characterization and modeling framework for long-term exposure of different rebars used for RC elements in the presence of chloride conditions <i>Deeparekha Narayanan, Yi Lu, Ayman Okeil and Homero Castaneda</i>
<b>h. 18.00</b>	Local scour-induced failure of existing masonry arch bridges <i>Fabrizio Scozzese, Laura Ragni, Enrico Tubaldi and Fabrizio Gara</i>	CFRP strengthened Reinforce Concrete Square Elements under Unequal Lateral Impact Load <i>Khalil Al-Bukhaiti, Liu Yanhui, Zhao Shichun and Hussien Abas</i>	Model calibration of a historic masonry arch bridge using a probabilistic approach <i>Brais Barros González, Borja Conde Carnero, Luis Javier Sanchez-Aparicio, Manuel Cabaleiro Núñez, Oscar Bouzas Rodríguez and Belén Riveiro Rodríguez</i>	Acoustic emission monitoring of the chloride-induced corrosion process in reinforced concrete <i>Eline Vandecruys, Charlotte Van Steen, Eline Vereecken, Geert Lombaert and Els Verstrynghe</i>



Wednesday 01/09/21- h. 11.00-12.30

	Room LUNA	Room EUROPA	Room GANIMEDE	Room PANORAMA
<b>Session</b> <b>8</b>	<b>Corrosion influence on the residual performance of RC and pre-stressed bridges (special session)</b>	<b>Modelling of nonlinear and uncertain behavior of concrete bridges (special session)</b>	<b>Risk assessment of bridges</b>	<b>Railway Bridges (special session)</b>
<b>Chair</b>	<b>Ilaria Venanzi</b>	<b>Alfred Strauss</b>	<b>Cristoforo Demartino</b>	<b>Pedro Aires Montenegro</b>
<b>h. 11.00</b>	Analytical modelling of transmission and anchorage length in corroded pre-tensioned concrete elements <i>Sergio Belluco, Nicola Fabris and Flora Faleschini</i>	Taylor Series Expansion for Statistical Analysis of Existing Concrete Bridge <i>Lukas Novak and Drahomir Novak</i>	<i>Time-variant seismic reliability of code-compliant RC bridges</i> <i>Klajdi Toska, Mariano A. Zanini and Flora Faleschini</i>	Development of damage detection methodologies in bridges using drive-by methods and machine learning algorithms: a systematic review of the literature <i>Edson F. Souza, Tulo N. Bittencourt, Diogo R. Ribeiro and Hermes</i>
<b>h. 11.15</b>	Fragility analysis of monitored reinforced concrete bridges subjected to cumulative effect of seismic damage and corrosion deterioration <i>Michela Torti, Ilaria Venanzi, Stefano Sacconi, Laura Ierimonti and Filippo Ubertini</i>	Modelling of Nonlinear and Uncertain Behavior of Concrete Bridges <i>Eftychia Apostolidi, Martina Šomodiková, Alfred Strauss, Drahomir Novak, Radomir Pukl and David Lehký</i>	Reliability-Based Bayesian Updating using Visual Inspections of Existing Bridges <i>Erica Arango, Monica Santamaria, Helder Sousa and Jose Matos</i>	Uncertainty and track stability: analysis of partial safety factors for high-speed railway bridges <i>Gonçalo Ferreira, Pedro Aires Montenegro, António Henriques and Rui Calçada</i>
<b>h. 11.30</b>	Variability in section loss and maximum pit depth of corroded prestressing wires <i>Lorenzo Franceschini, Francesca Vecchi, Francesco Tondolo, Beatrice Belletti, Javier Sanchez Montero and Paolo Minetola</i>	Nonlinear reliability assessment of post-tensioned concrete bridge made of I-73 girders <i>Martin Lipowczan and David Lehký</i>	<i>Bridge damage detection and quantification under environmental effects by Principal Component Analysis</i> <i>Fernando Tenelema, Rick Delgado and Joan Casas</i>	Modelling the long-term behaviour of a high-speed railway transition zone using a lumped parameter track model <i>Ilaria Grossoni, Samuel Hawksbee, Pedro Jorge and Yann Bezin</i>
<b>h. 11.45</b>	Testing to reassess – Corrosion activity assessment based on NDT using a prestressed concrete bridge as case-study <i>Stefan Maack, Roberto Torrent, Gino Ebell, Tobias Völker and Stefan Küttenbaum</i>	Probabilistic & semi-probabilistic analyses of Bridge Structures - Multi-level modelling based assessment of existing structures <i>Fabian Sattler and Alfred Strauss</i>	<i>Technical risks and, intervention and mitigation actions in bridges. A Technical Management Strategy</i> <i>Felipe Collazos-Arias, David Garcia-Sánchez and Álvaro Gaute-Alonso</i>	Dynamic response of poles built on railway bridges under high-speed train passages <i>Kodai Matsuoka, Mizuki Tsunemoto and Munemasa Tokunaga</i>
<b>h. 12.00</b>	Analytical models for the force-displacement response of a corroded seven-wire strand <i>Matteo Marra, Michele Palermo, Stefano Silvestri and Tomaso Trombetti</i>	The role of non-linear finite element modelling in practical safety assessments of structures and suitable safety formats for NLFEM <i>Matthias Rigler and Alfred Strauss</i>	Fatigue resistance of steel arch bridge hanger connection plates due to transverse welding <i>Philippe Van Bogaert</i>	Influence of the level of track irregularities in the derailment risk of a high-speed train moving over a bridge <i>Marco A. Peixer, Pedro A. Montenegro, Hermes Carvalho, Tulo N. Bittencourt and Rui Calçada</i>
<b>h. 12.15</b>	<i>Modeling non-uniform corrosion in reinforced concrete bridge piers</i> <i>Davide Bernardini, Daniela Ruta, Paolo Di Re and Achille Paolone</i>	Effect of substructure irregularity on the seismic vulnerability of short-span bridges <i>Khshayar Heydarpour, Pasquale Bencivenga, Hadi Monsef Ahmadi, Mattia Zizi and Gianfranco De Matteis</i>	Service life extension of early age steel bridges by reducing dead weight <i>Philippe Van Bogaert</i>	Experimental Verification of Extradosed Railway Bridge Behaviour <i>Ján Bujňák and Jaroslav Odrobiňák</i>



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