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

EUROSTRUCT 2021

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Tuesday 31/08/21- h. 11.00-12.30

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

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Behavior of real scale beams manufactured with electric arc furnace slag concrete.

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We live in a consumer society that generates excessive amounts of waste. Innovative techniques to reduce these volumes of waste are therefore important lines of research in engineering. The Electric Arc Furnace steelmaking industry in the Basque Country produces almost 1% of global electric-arc-steel production. Although driving the economy, it also implies the generation of a huge amounts of waste that has to be managed within a small region. Concrete is an extensively used product, which can absorb notable amounts of Electric Arc Furnace slag but, at the moment, there are only applications for use in unreinforced concrete. In this research work, real scale concrete beams containing electric arc furnace slag concrete are manufactured, in order to study their structural behavior. Our results showed that reinforced concrete elements containing electric arc furnace slag can be safely manufactured using current design standards.

Keywords: Electric arc furnace slag, Real scale beams, Reinforced concretes, Standards.

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