

9th International Symposium on Steel Bridges 2018 Programme

Monday 10th September 2018

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| 09:00 – 13:00 | KEYNOTE SPEAKERS | Hall: Zürich 2+3+4 |
| 09:00 – 09:10 | Opening speech (Prof. Frantisek Wald) | |
| 09:10 – 09:30 | LONG-SPAN ORTHOTROPIC STEEL DECK BRIDGES OF TURKEY <i>Nurdan M. Apaydin, Selcuk Bas (Turkey)</i> | |
| 09:30 – 09:50 | TROJA BRIDGE IN PRAGUE <i>Vladimír Janata, Dalibor Gregor, Ladislav Šašek, Petr Nehasil, Robert Brož (The Czech Republic)</i> | |
| 09:50 – 10:10 | RAILWAY ROAD BRIDGE IN NOVI SAD – STEEL TIED NETWORK ARCHES ACROSS THE DANUBE <i>Antonio Mora Munoz (Spain), A. Bojović, Z. Marković, N. Novaković, M. Spremić (Serbia), M. Pavlović (The Netherlands)</i> | |
| 10:10 – 10:30 | ROAD BRIDGE HATVAN, HUNGARY: A MONO ARCH BRIDGE DESIGN <i>Gábor Pál, László Hunyadi, Attila Dési, Tibor Borzai (Hungary)</i> | |
| 10:30 – 11:00 | Coffee break | |
| 11:00 – 11:20 | NEW STARY MOST (OLD BRIDGE) ACROSS DANUBE RIVER IN BRATISLAVA <i>Petr Novotný, Pavlína Juchelková, Pavel Svoboda, Jiří Stráský (The Czech Republic)</i> | |
| 11:20 – 11:40 | RAILWAY NETWORK ARCH BRIDGE – OSKAR <i>David Rose, Ondřej Čech (The Czech Republic)</i> | |
| 11:40 – 12:00 | BOOMERANG AND JUNGLE PEDESTRIAN BRIDGES IN OSLO <i>Gaute Mo, Mario Rando (Norway), Kathleen Overton (Spain)</i> | |
| 12:00 – 12:20 | MAINTENANCE FREE CORROSION PROTECTION FOR COMPOSITE BRIDGES WITH HOT-ROLLED SECTIONS <i>Dennis Rademacher (Luxembourg), Wojciech Ochojski (Poland)</i> | |
| 12:20 – 12:40 | HOLISTIC APPROACH TO SUSTAINABILITY OF BRIDGES <i>Nicoleta Popa, Marion Charlier, Mike Tibolt, Dennis Rademacher (Luxembourg), Pavel Ryjáček, Petr Jehlička, František Wald (The Czech Republic), Ulrike Kuhlmann (Germany), Ana M Pascual, Nuno Martins, Constança Rigueiro (Portugal), André Orcesi (France)</i> | |
| 12:40 – 13:00 | REHABILITATING PROJECT OF UNCONVENTIONAL SUSPENSION BRIDGE <i>Hermes Carvalho (Brazil)</i> | |
| 13:00 – 14:00 | Lunch | |

14:00 – 16:00 **Hall: Zürich 2+3**

CASE STUDIES

- 14:00 – 14:20 **THE PARTICULAR CHALLENGES OF EXPANSION JOINT INSTALLATION IN STEEL BRIDGES**
Tomáš Petřík, David Jelínek (The Czech Republic), Niculin Meng, Colm O'Suilleabhain (Switzerland)
- 14:20 – 14:40 **DESIGN, CONSTRUCTION AND ON-SITE FABRICATION OF THE CHENAB BRIDGE USING BIM**
Matti-Esko Järvenpää, Gabriel Neves (Finland)
- 14:40 – 15:00 **WHY STEEL BRIDGES FOR ACCELERATED BRIDGE CONSTRUCTION: STEEL BRIDGE SYSTEMS BEST SUITED FOR ABC**
Atorod Azizinamini (USA)
- 15:00 – 15:20 **ADVANCED SOLUTIONS WITH HOT-ROLLED SECTIONS FOR MORE ECONOMICAL BRIDGES**
Wojciech Lorenc, Maciej Kozuch, Wojciech Ochojski (Poland), Dennis Rademacher (Luxembourg)
- 15:20 – 15:40 **CASE STUDY: SMALL STEEL READY-MADE BRIDGES FOR RURAL AND MOUNTAINOUS AREAS**
Tihomir Nikolovski, Boris Tasevski, Darko Nikolovski (Macedonia)
- 15:40 – 16:00 **EXPERIENCE OF DUPLEX STAINLESS STEELS AS STRUCTURAL MATERIALS FOR BRIDGES**
Sukanya Hägg Mameng (Sweden), Andrew Backhouse, Jonathan McCray, Graham Gedge (United Kingdom)

16:00 – 16:20 **Coffee break**

14:00 – 17:20 **Hall: Zürich 4**

BRIDGE MAINTENANCE

14:00 – 14:20 **CHALLENGING THE PERFORMANCE MYTH OF INORGANIC ZINC RICH VS ORGANIC ZINC RICH PRIMERS AND ACTIVATED ZINC PRIMERS**
Raquel Morales, Antoni Prieto (Spain), Jose Luna (USA)

14:20 – 14:40 **LIFETIME EXTENSION OF EXISTING STEEL BRIDGES**
Alessio Pipinato, Roberto Pavan (Italy)

14:40 – 15:00 **FEVE BASED COATING SYSTEMS: PROTECTING STEEL BRIDGES FOR OVER 30 YEARS**
Floris B. Kooistra, Ben Runhaar, Charlène Danoux, Kiyoshi Kasahara (The Netherlands), Takasi Takayanagi (Japan)

15:00 – 15:20 **RETROFIT AGAINST FATIGUE CRACKING AT WEB PENETRATION DETAILS WITH A SLOT IN STEEL GIRDER**
Chihiro Sakamoto, Masahiro Sakano, Hideyuki Konishi, Takashi Fujii (Japan)

15:20 – 15:40 **PROBLEMS AND INNOVATIVE SOLUTIONS CONSIDERING “OPEN TYPE” BRIDGE DECK STRUCTURES IN OLD STEEL RIVETED RAILWAY BRIDGES**
Martina Nikolova, Lazar Georgiev (Bulgaria)

15:40 – 16:00 **LIGHTWEIGHT SOLUTION FOR EXISTING STEEL MOVABLE BRIDGE RETROFIT AND REPAIR**
Antonella Ruzzante, Roberto Pavan (Italy)

16:00 – 16:20 **Coffee break**

16:20 – 16:40 **FAILURE ANALYSIS AND REPAIR ASSESSMENT OF A STEEL BOX GIRDER BRIDGE**
Maciej Kulpa, Tomasz Siwowski (Poland)

16:40 – 17:00 **REINFORCED STRUCTURES TYPE “FILLER BEAM” – ADVANTAGES IN RECONSTRUCTION OF BRIDGE SUPERSTRUCTURES**
Alexander Jiponov, Lazar Georgiev (Bulgaria)

17:00 – 17:20 **ZINC COATINGS FOR SUSTAINABLE STEEL BRIDGES**
Martin Gagné, Frank E Goodwin, Martin van Leeuwen (USA)

16:20 – 17:40 **Hall: Zürich 2+3**

PEDESTRIAN BRIDGES

16:20 – 16:40 **MODULAR SYSTEM OF STEEL BRIDGES FOR PEDESTRIAN AND BICYCLES**
Pavel Simon (The Czech Republic)

16:40 – 17:00 **ADVANCED LAYOUT OF A STEEL BRIDGE - ULLEVAALSKRYSSET FOOTBRIDGE**
Andri Gunnarsson, Magnús Arason (Iceland)

17:00 – 17:20 **VÄSTER PEDESTRIAN AND CYCLE BRIDGE**
Gaute Mo (Norway), Fernando Ibáñez (Spain), Göran Werme, Henrik Hermansson, Johan Eriksson (Sweden)

17:20 – 17:40 **STOVNER TOWER - ACCESSIBLE PEDESTRIAN WALKWAY**
Birger Opgård, Gaute Mo (Norway), Altea Cámara (Spain)

Poster **DYNAMIC BEHAVIOUR OF THE STEEL FOOTBRIDGES WITH SPATIAL PIPE TRUSS GIRDERS**
Marek Pańtak, Bogusław Jarek, Kinga Marecik (Poland)

VIBRATION DAMPING IN STEEL FOOTBRIDGES
Marek Pańtak, Bogusław Jarek, Kinga Marecik (Poland)

COMPARATIVE ANALYSIS OF DYNAMIC BEHAVIOUR OF TWO CABLE-STAYED FOOTBRIDGES MADE ENTIRELY OF STEEL AND GFRP COMPOSITE
Piotr Górski, Beata Stankiewicz, Marcin Tatara (Poland)

19:30 – 22:30 **Symposium Dinner on Europé Boat on the Vltava River**

Tuesday 11th September 2018

09:00 – 10:20 **Hall: Zürich 2**

RESEARCH AND MATERIALS

09:00 – 09:20 **EXPERIMENTAL INVESTIGATION ON THE BRIDGE SEGMENTS WITH TRANSVERSALLY CURVED BOTTOM FLANGE**

Filip Ljubinković, João Pedro S. C. Martins, Helena M. S. Gervásio, Luís A. P. Simões da Silva (Portugal)

09:20 – 09:40 **SPECIAL HEAVY PLATES SOLUTIONS FOR BRIDGE BUILDING**

Tobias Lehnert (Germany)

09:40 – 10:00 **CHOICE OF STEEL GRADE FOR STRUCTURAL APPLICATIONS – DESIGN FORTOUGHNESS REQUIREMENTS ACCORDING EUROCODES**

Riccardo Zanon, Mike Tibolt (Luxembourg), Bertram Kühn (Germany)

10:00 – 10:20 **EXPERIMENTAL EVALUATION OF STIFFENED CURVED PLATES SUBJECTED TO PURE COMPRESSION**

Sara Piculin, Franc Sinur, Primož Može (Slovenia)

10:20 – 11:00 **Coffee break**

09:00 - 10:20 **Hall: Zürich 3**

REFURBISHMENT

09:00 – 09:20 **BOX-ACTION GIVING NEW LIFE-TIME TO OLD STEEL BRIDGES**

Victor Vestman, Peter Collin, Mikael Möller (Sweden)

09:20 – 09:40 **EXPERIMENTAL RESULTS OF STEEL TRUSS NODES STRENGTHEN BY HIGH STRENGTH CONCRETE ENCASEMENT**

Stoyan Ivanov (Bulgaria), Roman Geier (Austria), Carlos Rebelo, Bruno Pedrosa (Portugal)

09:40 – 10:00 **USING FRACTURE MECHANICS PRINCIPLES IN STEEL BRIDGE RENOVATION PROJECTS**

Maarten Rikken, Daan Tjepkema (The Netherlands), David Gratton (United Kingdom)

10:00 – 10:20 **THE STRENGTHENING OF A STEEL BRIDGE WITH PRESTRESSED CFRP STRIPS**

Tomasz Siwowski, Paulina Siwowska, Agnieszka Wiater (Poland)

Poster **APPLICATION OF RESEARCH INTO DECK BRIDGES WITH ENCASED FILLER-BEAMS IN DESIGN PRACTICE**

Viktória Kožlejová, Lubomír Kožlej, Vincent Kvočák (Slovakia)

10:20 – 11:00 **Coffee break**

09:00 – 10:20 **Hall: Zürich 4**

STRUCTURAL CONNECTIONS

09:00 – 09:20 **RESEARCH ON SHEAR AND BOLT CONNECTION OF STEEL AND COMPOSITE BRIDGE CONSTRUCTION REGARDING CORROSION PROTECTION**
Dieter Ungermann, Svenja Holtkamp, Peter Hatke, Johannes Grote (Germany)

09:20 – 09:40 **ADVANCED PROCEDURES FOR DESIGN OF BOLTED CONNECTIONS**
František Wald, Jaromír Kabeláč, Marta Kuřiková, Ondřej Perháč, Pavel Ryjáček, Oscar Minor, Marcos Bryan Flores Pazmiño, Lubomír Šabatka, Drahoslav Kolaja (The Czech Republic)

09:40 – 10:00 **AN EXPERIMENTAL STUDY OF FRICTION CONNECTION FOR DIFFERENT SURFACE TREATMENTS**
Mattias Varedian, Peter Collin, Kjell Eriksson, Erik Andersson (Sweden)

10:00 – 10:20 **TIME-OPTIMIZED ASSEMBLY OF BRIDGE BEARINGS**
Luigi Di Gregorio (Germany)

10:20 – 11:00 **Coffee break**

11:00 – 12:20 **Hall: Zürich 2**

FABRICATION AND CONSTRUCTION

11:00 – 11:20 **FABRICATION AND CONSTRUCTION OF A HEXAGONAL SECTION STEEL ARCH BRIDGE**
Philippe Van Bogaert, Heng Fang, Hans De Backer (Belgium)

11:20 – 11:40 **GALVANIZED BRIDGES IN JAPAN**
Hiroshi Shibayama, Yoshikazu Takedomi (Japan), Murray Cook (United Kingdom)

11:40 – 12:00 **INFLUENCE OF HIGH FREQUENCY IMPACT TREATMENT (HIFIT) ON FATIGUE STRENGTH OF WELDED JOINTS OF HIGH-STRENGTH STEEL S700MC FOR BRIDGES APPLICATIONS**
Krzysztof Krasnowski (Poland)

12:00 – 12:20 **NEW MODULAR BRIDGES SOLUTIONS**
António André, J. Fernandes, I. Ferraz, P. Pacheco (Portugal)

12:20 – 13:20 **Lunch**

11:00 – 12:20 **Hall: Zürich 3**

RAILWAY BRIDGES

11:00 – 11:20 **COMPOSITE BRIDGE SOLUTIONS IN ROLLED SHAPES FOR SMALL AND MEDIUM SPAN BRIDGES – REVIEW AND FUTURE DEVELOPMENTS**
Riccardo Zanon, Toni Demarco, Dennis Rademacher (Luxembourg)

11:20 – 11:40 **RAILWAY BRIDGES - SUDOP PRAHA A.S.**
Petr Šetřil, Filip Kutina (The Czech Republic)

11:40 – 12:00 **COMPARISON OF ACOUSTIC PHENOMENA IN THE VICINITY OF TWO TYPES OF STEEL PLATE GIRDER BRIDGES**
Lucjan Janas (Poland)

12:00 – 12:20 **NEW ATHENS-THESSALONIKI HIGH SPEED RAILWAY LINE: DETAILED DESIGN AND CONSTRUCTION ENGINEERING OF A STEEL TIED-ARCH BRIDGE**
Georgios Mavrakis, Eleftheria D Gkoutzika (Greece)

12:20 – 13:20 **Lunch**

11:00 – 12:20 **Hall: Zürich 4**

BRIDGE MONITORING

11:00 – 11:20 **STRAIN MEASUREMENT OF A BRIDGE DECK IN ORDER TO EVALUATE THE FATIGUE LIFE OF A STEEL BRIDGE ON THE D1 HIGHWAY IN THE VYSOČINA REGION**
Antonín Pechal, Ing. Vojtěch Konečný, Ing. Petr Nečesal, Stanislav Vejvoda (The Czech Republic)

11:20 – 11:40 **OPEN AND STANDARD-BASED METHOD TO LINK STRUCTURAL HEALTH MONITORING DATA THROUGH A BRIM WITH A BRIDGE FM SYSTEM**
Seppo Törmä, Markku Kiviniemi, Keijo Koski, Pekka Toivola, Päivi Puntila (Finland)

11:40 – 12:00 **POTENTIAL MODELLING AND VERIFICATION OF BRIDGE SUPERSTRUCTURES BEHAVIOUR**
Ján Bujňák, J. Gocál, J.Odrobiňák (Slovakia)

12:00 – 12:20 **NUMERICAL SIMULATION OF RIB DISTORTION IN ORTHOTROPIC STEEL DECKS**
Heng Fang, Evy Van Puymbroeck, Nouman Iqbal, Zain Ul-Abdin, Hans De Backer (Belgium)

Poster **EFFECTIVENESS OF GPS TECHNOLOGY IN MONITORING OF TRAFFIC-INDUCED RESPONSE OF HIGHWAY STEEL BRIDGE**
Piotr Górski, Monika Napieraj (Poland), Eduard Konopka, Peter Breuer (Germany)

HYBRID MEASUREMENT TECHNIQUES USED TO A STUDY OF HISTORIC CAST IRON SUSPENSION BRIDGE
Wojciech Anigacz, Damian Beben, Jacek Kwiatkowski (Poland)

12:20 – 13:20 **Lunch**

13:20 – 15:00 **Hall: Zürich 2**

HIGHWAY BRIDGES

- 13:20 – 13:40 **CONSTRUCTION OF THE ANGERBACHTAL BRIDGE**
Andreas Jäger-Cañás, Mathias Clobes (Denmark)
- 13:40 – 14:00 **ARCHITECTURE OF STEEL BRIDGES**
Jiří Stráský (The Czech Republic)
- 14:00 – 14:20 **FATIGUE FAILURE MODES AND FATIGUE RESISTANCE EVALUATION FOR STRUCTURAL SYSTEM OF ORTHOTROPIC STEEL BRIDGE DECK**
Qinghua Zhang, Jun Li, Donglin Jia, Yizhi Bu (China)
- 14:20 – 14:40 **BARKARBY BRIDGE**
Manuel Biedma García, Mayra Toledo Serrano, F. Javier Martínez López, José Manuel González Parejo (Spain)
- 14:40 – 15:00 **NORGESPORTEN ROAD BRIDGE, THE GATEWAY TO NORWAY**
Gaute Mo (Norway), Kathleen Overton, Fernando Ibáñez (Spain)
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13:20 – 15:00 **Hall: Zürich 3**

RESEARCH AND INOVATIONS

- 13:20 – 13:40 **INVESTIGATION ON STIFFENED PANELS SUBJECTED TO BIAXIAL COMPRESSION**
Martin Mensinger, Ulrike Kuhlmann, Joseph Ndogmo, Vahid Pourostad, Nadine Maier (Germany)
- 13:40 – 14:00 **INVESTIGATION OF DISPLACEMENTS FUNCTION IN SOIL-STEEL BRIDGE BASED ON STRAIN GAUGES MEASUREMENTS**
Czesław Machelski, Piotr Tomala (Poland)
- 14:00 – 14:20 **AUTOMATION OF EVALUATION OF DATA MEASURED ON STEEL BRIDGES, CATEGORY DETAIL OF WELDED LAMELLAS**
Stanislav Vejvoda (The Czech Republic)
- 14:20 – 14:40 **MODELS OF THERMAL ACTIONS FOR STEEL AND COMPOSITE BRIDGES BASED ON MONITORING**
Jana Marková (The Czech Republic)
- 14:40 – 15:00 **THE IMPACT OF BACKFILL QUALITY ON SOIL-STEEL COMPOSITE BRIDGE RESPONSE UNDER SEISMIC EXCITATION**
Tomasz Maleska, Damian Beben (Poland)

13:20 – 15:40 **Hall: Zürich 4**

BRIDGE MONITORING

- 13:20 – 13:40 **STRUCTURAL HEALTH MONITORING FOR COMBINED DAMAGE STATES**
Martin A. Butler, James A. Swanson, Gian A. Rassati (USA)
- 13:40 – 14:00 **FATIGUE PERFORMANCE EVALUATION OF STEEL ARCH BRIDGE BASED ON EXPERIMENTAL TESTS IN THE LIGHT OF INCREASED OPERATING LOADS**
Mieszko Kużawa (Poland)
- 14:00 – 14:20 **ESTIMATE OF THE STEEL BRIDGES FATIGUE LIFE BY APPLICATION OF THE FRACTURE MECHANICS**
Ján Bujňák, Ružica R. Nikolić, M. Hadzima (Slovakia), Jelena M. Djković (Serbia)
- 14:20 – 14:40 **DAMAGE OR CHANGE DETECTION IN A SMALL SCALE MODEL OF STEEL BRIDGE DECK UNDER STATIC LOADING BY EXTENSOMETRY**
Sidali Iglouli, N. Boumechra, K. Hamdaoui (Algeria)
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HISTORICAL BRIDGES

- 14:40 – 15:00 **THE RESIDUAL LIFETIME OF STEEL BRIDGES UNDER THE ACTION OF FATIGUE AND CORROSION EFFECTS**
Martin Macho, Pavel Ryjáček (The Czech Republic), José António Campos e Matos (Portugal)
- 15:00 – 15:20 **COMPARISON OF FEM ANALYSIS AND EXPERIMENTAL INVESTIGATION FOR A 168M LONG STEEL DOUBLE TWIN TRUSS LAUNCHING GANTRY SUBJECTED TO DIFFERENT LOAD AND SUPPORT CONDITIONS**
Doncho Partov, Lazar Georgiev (Bulgaria)
- 15:20 – 15:40 **FACTORS INFLUENCING THE DESIGN LIFE OF OLD STEEL BRIDGES**
Nor Ashikin Muhamad Khairussaleh (Malaysia), Gerald A.R. Parke, Boulent Imam (United Kingdom)
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15:40 – 16:30 **Coffee break**

16:30 – 18:30 **5TH EUROPEAN STEEL BRIDGE AWARDS CEREMONY**

19:30 – 23:00 **Gala Dinner**



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