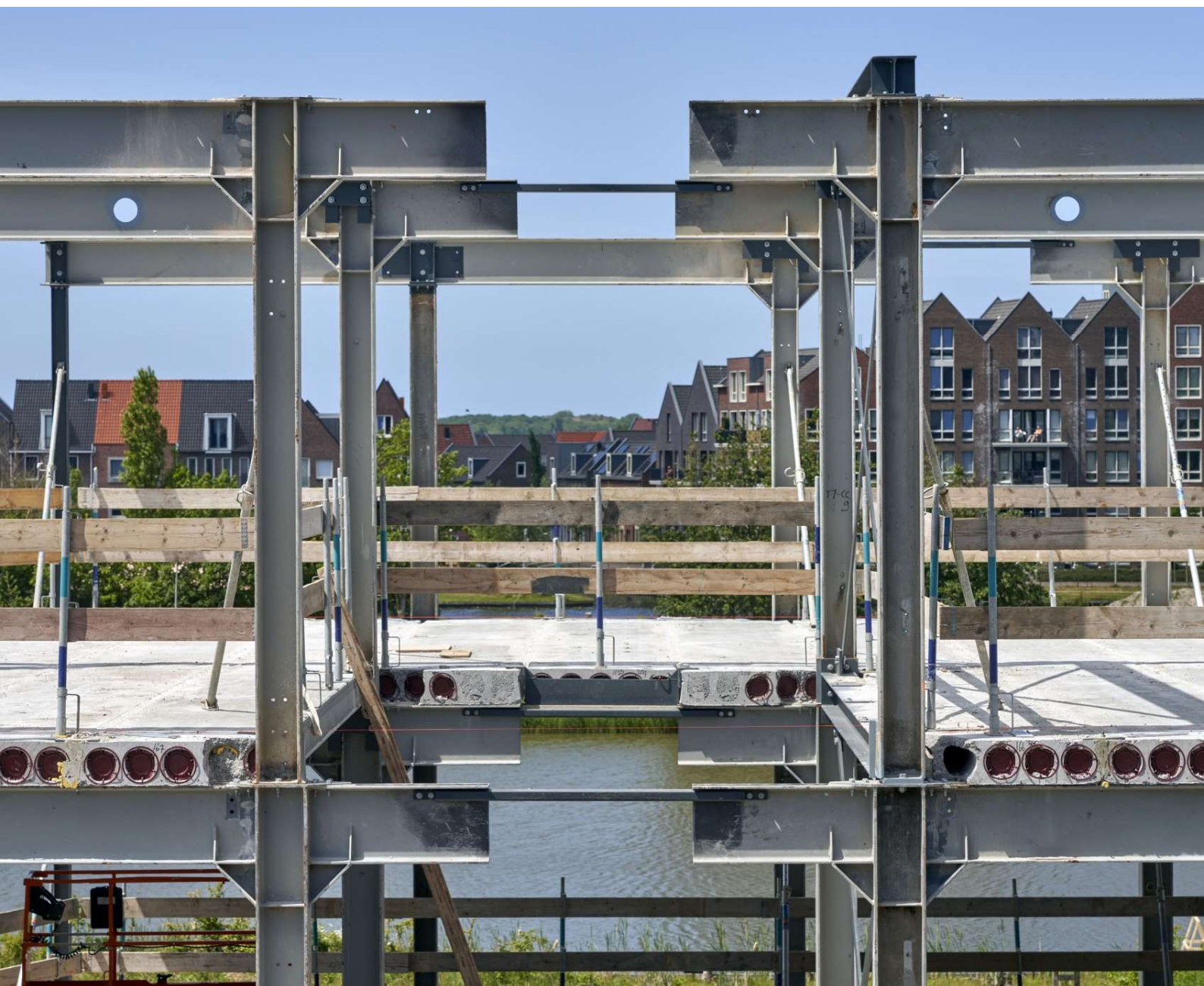




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PROGRAM

Eurosteel 2023 Amsterdam

The 10th European
Conference on Steel and
Composite Structures

12-14 SEPTEMBER 2023

General Information

Conference Dates

12 September - 14 September 2023

Conference venue

Theatre and conference center Meervaart
Meer en Vaart 300,
1068 LE Amsterdam, Netherlands



Conference App

The interactive version of the detailed program, list of speakers and attendees, and other useful information can be found in the conference app "Eurosteel" which can be downloaded from the Apple Store and Google Play.

Access to scientific papers

For smartphones, tablets and laptops, online access to the scientific papers will be available from the beginning of the conference (12 September) via the conference app "Eurosteel" or via browser. The login credentials will be communicated on site to the conference attendees.

Organizing committee

Prof. Dr. Milan Veljkovic - TU Delft

Dr. Trayana Tankova - TU Delft

Dr. Florentia Kavoura - TU Delft

Frank Maatje - Bouwen met Staal

Véronique Dehan - ECCS

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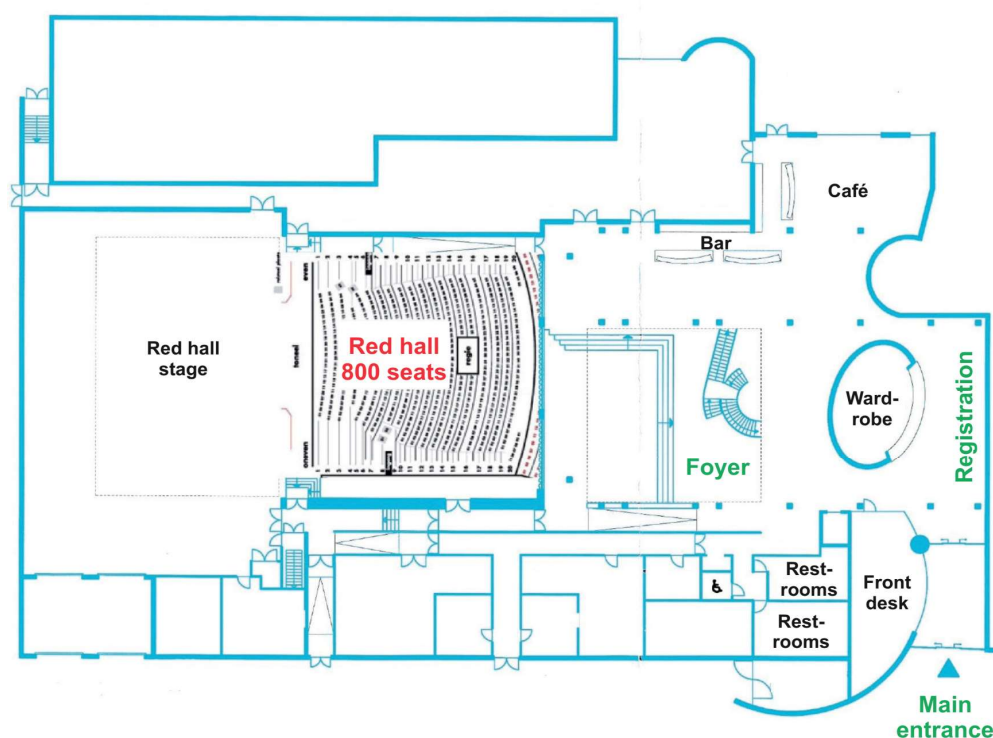
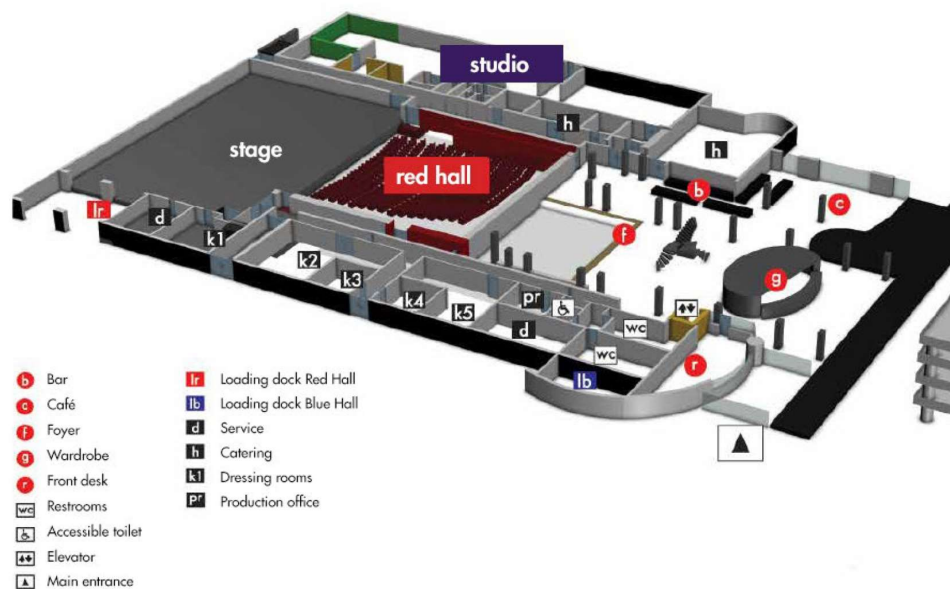


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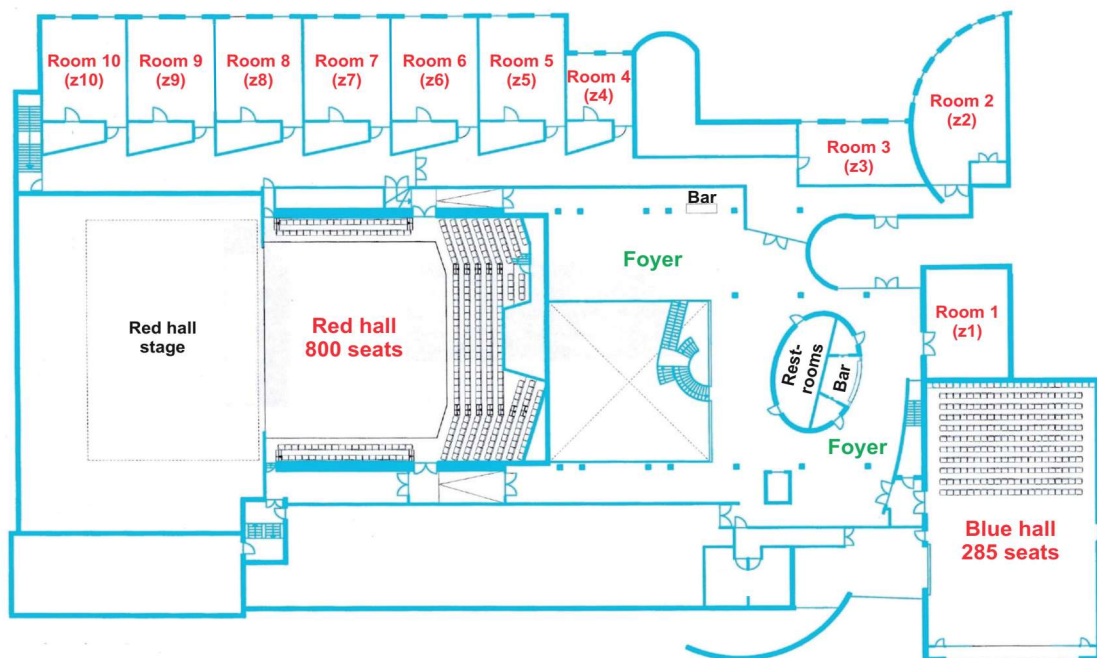
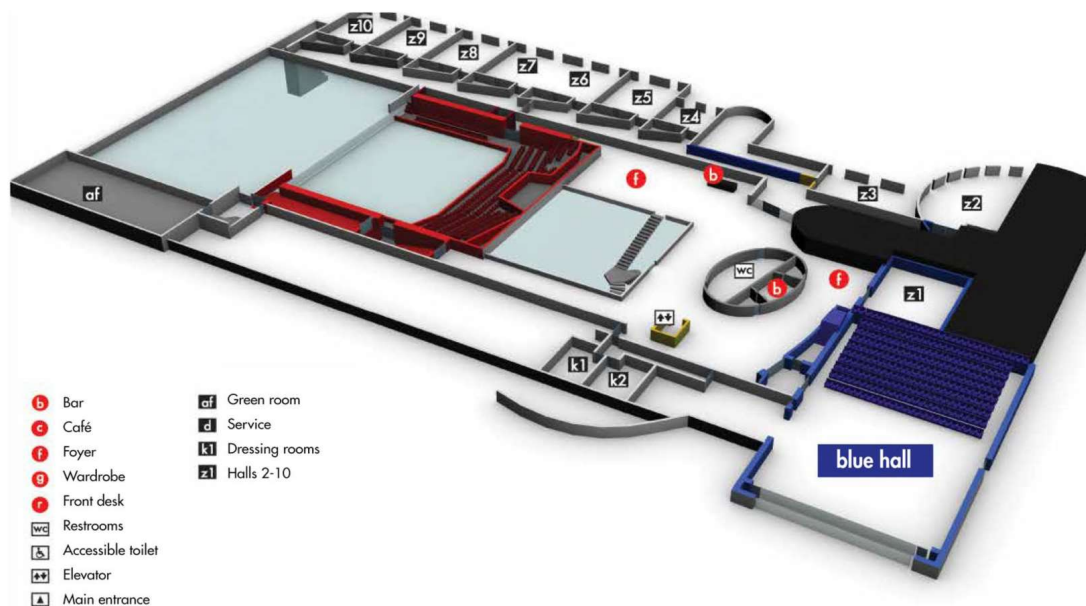
Conference venue | Meervart

Ground floor



Conference venue | Meervart

First floor



DAY 1											
Time	Red Hall	Blue Hall	Room 1	Room 2	Room 3	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10
08:00-09:15	Registration & Coffee (Foyer)										
09:15-09:30	Opening words & welcome										
09:30-10:30	Keynotes										
10:30-11:00	Coffee break (Foyer)										
11:00-12:15	Keynote & Panel discussion "Sustainable policy and research"										
12:15-12:30	Outstanding Paper Awards										
12:30-13:30	Lunch (Foyer)										
13:30-15:00	Re-use of steel	Steel Composite Structures	Bolted Connections	Machine Learning in Engineering Design and Construction	Stability and Plasticity in Plates and Shells	Stability of Cross-Sections, Members and Frames	Cold-Formed Structures	Novel Structural Solutions	Novel Structural Solutions	Sustainability Assessment and Design	Welded Joints and Connections
15:00-15:30	Coffee break (Foyer)										
15:30-17:00	Impact of new Eurocodes	Steel Composite Structures	Bolted Connections	Machine Learning in Engineering Design and Construction	Stability and Plasticity in Plates and Shells	Stability of Cross-Sections, Members and Frames	Cold-Formed Structures	High-strength, Stainless and other Special Steels	Novel Structural Solutions	Sustainability Assessment and Design	Welded Joints and Connections
17:15-18:15	ECCS Award										
18:15-19:30	Get together										

DAY 2											
Time	Red Hall	Blue Hall	Room 1	Room 2	Room 3	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10
08:30-09:00	Registration & Coffee										
09:00-10:00	Keynotes										
10:00-10:30	Coffee break (Foyer)										
10:30-12:30	Bolted Connections	Steel Composite Structures	-	Fatigue and Fracture	Stability and Plasticity in Plates and Shells	Bridge Construction and Structural Design	Cold-Formed Structures	High-strength, Stainless and other Special Steels	Fire Resistance and Structural Robustness	Seismic Resistance, Dynamics and Vibration	Welded Joints and Connections
12:30-14:00	Lunch (Foyer)										
14:00-15:30	Bolted Connections	Steel Composite Structures	-	Fatigue and Fracture	3D Printing and Additive Manufacturing	Bridge Construction and Structural Design	Cold-Formed Structures	High-strength, Stainless and other Special Steels	Fire Resistance and Structural Robustness	Seismic Resistance, Dynamics and Vibration	Welded Joints and Connections
15:30-16:00	Coffee break (Foyer)										
16:00-17:30	Bolted Connections	Steel Composite Structures	-	Fatigue and Fracture	3D Printing and Additive Manufacturing	Bridge Construction and Structural Design	Cold-Formed Structures	High-strength, Stainless and other Special Steels	Fire Resistance and Structural Robustness	Seismic Resistance, Dynamics and Vibration	Reuse and Retrofitting of Structural Element
20:00	Conference dinner										

DAY 3											
Time	Red Hall	Blue Hall	Room 1	Room 2	Room 3	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10
08:30-09:00	Registration & Coffee										
09:00-10:00	Keynotes										
10:00-10:30	Coffee break (Foyer)										
10:30-12:30	Steel Composite Structures	Steel Composite Structures	Bolted Connections	Fatigue and Fracture	3D Printing and Additive Manufacturing	ECCS TC8 Stability Session 1	Masts and Towers, Offshore Structures	Eurocode and International Design Codes	Fire Resistance and Structural Robustness	Seismic Resistance, Dynamics and Vibration	Reuse and Retrofitting of Structural Element
12:30-14:00	Lunch (Foyer)										
14:00-16:00	Steel Composite Structures	Steel Composite Structures	Design for Fast Execution and Disassembling	Fatigue and Fracture	3D Printing and Additive Manufacturing	ECCS TC8 Stability Session 2	Masts and towers, Offshore Structures	Eurocode and International Design Codes	Fire Resistance and Structural Robustness	Seismic Resistance, Dynamics and Vibration	Reuse and Retrofitting of Structural Element
16:00-16:30	Coffee break (Foyer)										
16:30-17:30	Closing words										

EUROSTEEL 2023 - DAY 1

Keynote lectures | Red Hall | Day 1 - 9:30-10:30

Chairpersons: Bernhard Hauke, Frank Maatje

Time	Title	Speaker
09:30-10:00	Keynote lecture Academic challenges for sustainable steel	Jacqueline Cramer
10:00-10:30	Keynote lecture Rethink the way we design buildings with less material and longer life cycle	Olivier Vassart

Keynote lecture & Panel discussion | Red Hall | Day 1 - 11:00-12:15

Chairpersons: Bernhard Hauke, Frank Maatje

Time	Title	Speaker(s)
11:00-11:30	Keynote lecture Enabling re-use: stadium 974	Christoph Paech
11:30-12:15	Panel discussion Sustainable policy and research	Johannes Kreißig, Torben Larsen

Outstanding Paper Awards | Red Hall | Day 1 - 12:15-12:30

PARALLEL SESSION 1 (PS-1) - Day 1 - 13:30-15:00

PS-1a | Re-use of steel | Red Hall | Day 1 - 13:30-15:00

Chairpersons: Milan Veljkovic, Florentia Kavoura

Time	Title	Speaker	Authors
13:30-13:45	Introduction to the reuse of steel elements	Pim Peters	-
13:45-14:00	How does the NTA 8713 work - Reuse of steel elements in practice	Maarten Swinkels	-
14:00-14:15	Determination of material properties in existing structures by testing	Cécilia Braendstrup	
14:15-14:30	Design fundamentals of demountable steel structures: from materials to members	Junwei Fan	Fan, Junwei; Yang, Lu; Liu, Meiyu
14:30-14:45	Experiences of dismantling a temporary court house of Amsterdam	Menno Rubens	-
14:45-15:00	<i>Discussion moderated by the chairpersons</i>		

PS-1b | Steel Composite Structures | Blue Hall | Day 1 - 13:30-15:00

Chairpersons: Zlatko Markovic, Hervé Degée

Time	Title	Speaker	Authors
13:30-13:45	Experimental investigations on composite columns: round hollow sections with embedded solid core section made of high-strength steel	Jonas Nonn	Nonn, Jonas; Janiak, Till; Wolters, Kevin; Rittich, Nils; Feldmann, Markus
13:45-14:00	Load transfer of circular reinforced composite dowel connector: a comparison of existing analytical equations	Maxence Paoletti	Paoletti, Maxence; Schäfer, Markus
14:00-14:15	Bending resistance of steel-timber composite (STC) beams: analytical vs. numerical investigations	Alfredo Romero Guzman	Romero, Alfredo; Yang, Jie; Odenbreit, Christoph
14:15-14:30	Four-point bending test of Composite beam with Concrete-GFRP cross-section	Michala Weissová	Weissová, Michala; Kvočák, Vincent; Dubecký, Daniel; Vanova, Patricia
14:30-14:45	High-Performance Pre-engineered Steel-Concrete Composite Beams for Sustainable Construction – Mechanical Behaviour of the Full-Scale Beams	Ming-Shan Zhao / Katherine A. Cashell	Zhao, Ming-Shan; Chua, Guan-Feng; Ding, Miao; Chiew, Sing-Ping; Yang, Yi; Cong, Zhengxia; Ng, Yiaw-Heong
14:45-15:00	Experimental tests of a modular composite frame corner for integral abutment bridges with sheet-piling foundations	Nils Rittich	Rittich, Nils; Wolters, Kevin; Nonn, Jonas; Feldmann, Markus; Ivanov, Stoyan; Tibolt, Mike

PARALLEL SESSION 1 (PS-1) - Day 1 - 13:30-15:00

PS-1c | Bolted Connections | Room 1 | Day 1 - 13:30-15:00

Chairpersons: Mirela Adriana Chesoan, José Henriques

Time	Title	Speaker	Authors
13:30-13:45	Experimental comparison between threaded-bars and single-bolts end plate asymmetrical steel joints	Alfonso Loureiro	Loureiro, Alfonso; López, Manuel; Gutiérrez, Ruth; Reinos, Jose Manuel
13:45-14:00	Preloaded bolted connections with duroplastic gap filling materials	Philipp Werner	Makevičius, Lukas; Stranghöner, Natalie; Korbaj, Anas; Werner, Philipp; Kunde, Carsten; Thelen, Sebastian
14:00-14:15	Damage evaluation of steel frame subjected to impact load at midspan	Ying Chen	Chen, Ying; Chen, Wensu; Hao, Hong; Nie, Zhenhua
14:15-14:30	Evaluation of Existing Methods for Predicting Tension Resistance of Gusset Plates with Short Edge Distances	Yi-Seop Shin	Shin, Yi-Seop; Kim, Hyung-Joon
14:30-14:45	Numerical Investigation of a Sustainable Composite Connection	Themistoklis Tsalkatidis	Tsalkatidis, Themistoklis; Rath, Lars Christoffer Haug
14:45-15:00	Investigations into the yield-controlled tightening method for steel constructions	Denis Paluska	Stranghöner, Natalie; Paluska, Denis; Jungbluth, Dominik; Schaumann, Peter; Schierl, Christopher

PS-1d | Machine Learning in Engineering Design and Construction | Room 2 | Day 1 - 13:30-15:00

Chairpersons: Gang Shi, Martin Vild

Time	Title	Speaker	Authors
13:30-13:45	Machine learning models for the ultimate strength of steel beams – influence of bending moment diagram	Paulo Vila Real	Couto, Carlos; Vila Real, Paulo
13:45-14:00	Probability of detection curve for the automatic visual inspection of steel bridges	Andrii Kompanets	Kompanets, Andrii; Leonetti, Davide; Duits, Remco; Maljaars, Johan; Snijder, Bert
14:00-14:15	Predictive modelling and latent space exploration of steel profile overstrength factors using multi-head autoencoder-regressors	Michael Kraus	Kraus, Michael A.; Müller, Andreas; Bischof, Rafael; Taras, Andreas
14:15-14:30	Deep Neural Network Directs Stiffness Method: Fundamental Steps into Beam Design	Andreas Müller	Müller, Andreas; Taras, Andreas
14:30-14:45	Shear connector design using data analytics approaches	Hannah Blum	Koh, Hyeyoung; Blum, Hannah B.
14:45-15:00			

PS-1e | Stability and Plasticity in Plates and Shells | Room 3 | Day 1 - 13:30-15:00

Chairpersons: Filip Ljubinkovic, Harald Unterweger

Time	Title	Speaker	Authors
13:30-13:45	Numerical study on the effect of longitudinal stiffeners ending within the buckling field	Immo Lukas	Lukas, Immo; Timmers, Ralph; Lang, Robert
13:45-14:00	A MATLAB finite element toolbox for the efficient nonlinear analysis of axisymmetric shells	Achilleas Filippidis	Filippidis, Achilleas; Sadowski, Adam J.
14:00-14:15	Stress increases in crane runway girders due to rail joints	Markus Kettler	Kettler, Markus; Unterweger, Harald
14:15-14:30	Investigation on shear buckling of steel welded I-section beams with reinforced web openings	Jian Wang	Wang, Jian; Li, Zheng; Euler, Mathias
14:30-14:45	Experiment-based statistical distribution of buckling loads of cylindrical shells	Zheng Li	Li, Zheng; Pasternak, Hartmut; Geißler, Karsten
14:45-15:00	Load capacity of penstock manifolds subjected to increasing settlements at the vertical supports	Martin Langwieser	Langwieser, Martin; Ecker, Alexander; Unterweger, Harald

PARALLEL SESSION 1 (PS-1) - Day 1 - 13:30-15:00

PS-1f | Stability of Cross-Sections, Members and Frames | Room 5 | Day 1 - 13:30-15:00

Chairpersons: László Dunai, João Pedro Martins

Time	Title	Speaker	Authors
13:30-13:45	Linear elastic buckling of composite beams – An analytical engineering approach	Johannes Derks	Derks, Johannes
13:45-14:00	Algorithm for the plastic analysis of arbitrary steel cross sections based on finite element formulations	Stalin Ibáñez	Ibáñez, Stalin; Kraus, Matthias
14:00-14:15	The plastic deformation capacity of the structural system for thin-web steel beam reinforced with stiffener plates	Masashi Nitawaki	Nitawaki, Masashi; Ishii, Daigo
14:15-14:30	Bracing requirements for a semi-rigidly connected column considering column lateral stiffness and initial curvature	Lei Xu	Zhang, Linbo; Xu, Lei
14:30-14:45	Experimental investigations - Steel rolled I-shape beam-columns with mid-length restraint	Pawel Wiedro	Gizejowski, Marian; Jastrzębski, Kamil; Nykiel, Damian; Slecza, Lucjan; Wiedro, Pawel
14:45-15:00			

PS-1g | Cold-Formed Structures | Room 6 | Day 1 - 13:30-15:00

Chairpersons: Dan Dubina, Kim Rasmussen

Time	Title	Speaker	Authors
13:30-13:45	An experimental investigation into span length effect in composite CFS and timber-based flooring systems	Samar Raffoul	Raffoul, Samar; Sun, Yao; McCrum, Daniel
13:45-14:00	Prediction of the cyclic rotation capacity of steel members with cold-formed hollow cross-section	Marco Caragliano	Bosco, Melina; Caragliano, Marco; D'Aniello, Mario; Landolfo, Raffaele; Rossi, Pier Paolo
14:00-14:15	Effective Modulus Method (EMM) concept applied to thin-walled steel columns	Luis Prola	Prola, Luís; Gala, Pedro; Ruben, Rui B. ; Monteiro, Cristiano; Simões, Ana
14:15-14:30	Uncertainties in the structural design of the high-bay cold storage warehouses	Annabella Sánduly	Sánduly, Annabella; Kelemen, Andrea; Nagy, Zsolt
14:30-14:45	Slotted lightweight steel sections for thermal improvement of building envelopes	Gesa Pauli	Pauli, Gesa; Kuhnhenne, Markus
14:45-15:00	Structural behaviour of Cold-Formed Steel back-to-back welded sections subjected to longitudinal shear	Mahendrakumar Madhavan	Naik, Bishal; Madhavan, Mahendrakumar

PS-1h | Novel Structural Solutions | Room 7 | Day 1 - 13:30-15:00

Chairpersons: Angeliki Christoforidou, Jelena Dobrić

Time	Title	Speaker	Authors
13:30-13:45	Testing of a Novel Induction Heat Treated Steel Brace with Enhanced Buckling Behaviour	Shadiya Jamshiyas	Jamshiyas, Shadiya; Skalomenos, Konstantinos
13:45-14:00	Resilience Assessment of a two-storey Steel Structure equipped with Innovative Connections	Elena Elettore	Elettore, Elena; Freddi, Fabio; Latour, Massimo; Piluso, Vincenzo; Rizzano, Gianvittorio
14:00-14:15	Experimental test setup design for ultimate limit state evaluation of ductile wrapped composite KK-joints	Mattieu Koetsier	Koetsier, Mathieu; de Vries, Peter; Peeters, Tjeu; Pavlovic, Marko
14:15-14:30	Experimental investigation of wrapped composite X-joints under uniaxial and multi-axial loading conditions	Mattieu Koetsier	Koetsier, Mathieu; Yang, Jincheng; Wolters, Mees; van Leengoed, Berend; Pavlovic, Marko
14:30-14:45	Novel bolted steel joint to improve anti-collapse resistance of steel structure	Aleksander Kozłowski	Kozłowski, Aleksander; Kukla, Damian
14:45-15:00	Innovations for Bolted RHS Column Splices	Jeffrey Packer	Packer, Jeffrey

PARALLEL SESSION 1 (PS-1) - Day 1 - 13:30-15:00

PS-1i | Novel Structural Solutions | Room 8 | Day 1 - 13:30-15:00

Chairpersons: Rajarshi Das, Xin Meng

Time	Title	Speaker	Authors
13:30-13:45	Novel Hybrid Modular Construction System - Structural Behaviour of Isolated Sub-Frames	Nemanja Milovanovic	Milovanovic, Nemanja; Simões, Rui; Tankova, Trayana; Carlos Silva, Luis; Craveiro, Hélder; Costa, Ricardo; Simões da Silva, Luís
13:45-14:00	Improving the behavior of semi-supported steel plate shear walls using diagonal stiffeners	Georgios Ilia	Kontoni, Denise-Penelope N.; Ghamari, Ali; Poor Omid, Mohamad Saeid; Ilia, Georgios
14:00-14:15	An innovative I-shaped low-yield steel shear damper directly connected to the concentrically braced frame	Georgios Ilia	Kontoni, Denise-Penelope N.; Ghamari, Ali; Kheiri, Javad; Ilia, Georgios
14:15-14:30	Web crippling behaviour and design of aluminium SupaCee sections	Thirunavukkarasu Kajaharan	Thirunavukkarasu, Kajaharan; Alsanat, Husam; Poologanathan, Keerthan; Shanmuganathan, Gunalan; Perampalam, Gatheeshgar; Kanthasamy, Elilarasi; Muhammad, Rahman; Higgins, Craig
14:30-14:45	Memory-Steel for Smart Steel Structures: A Review on Recent Developments and Applications	Elyas Ghafoori	Wang, Sizhe; Mohri, Maryam; Li, Lingzhen; Izadi, Mohammadreza; Jafarabadi, Ali; Pichler, Niels; Ghafoori, Elyas
14:45-15:00	Adhesive bonding of secondary steel components for offshore wind turbines	Jakob Boretzki	Albiez, Matthias; Boretzki, Jakob; Ummenhofer, Thomas

PS-1j | Sustainability Assessment and Design | Room 9 | Day 1 - 13:30-15:00

Chairpersons: Stefanos Gkatzogiannis, Nauzika Kovács

Time	Title	Speaker	Authors
13:30-13:45	Enhancing Energy Efficiency of Cold-formed Steel Framed Walls with Vacuum Insulation Panels	Rajanayagam Heshachanaa	Rajanayagam, Heshachanaa; Upasiri, Irindu; Poologanathan, Keerthan; Perampalam, Gatheeshgar; Nagaratnam, Brabha; Kanthasamy, Elilarasi
13:45-14:00	Decarbonisation of steel production by the low-carbon DRI-EAF route	Helena Gervásio	Gervásio, Helena; Simões da Silva, Luís
14:00-14:15	Life-Cycle-Assessment of a wildlife bridge: influence of the structural design on the carbon emissions	José Humberto Matias de Paula Filho	Matias de Paula Filho, José Humberto; Zanon, Riccardo; Glorieux, Antoine
14:15-14:30	Economic and environmental assessment of high-strength steel grades	Loris Saufnay	Saufnay, Loris; Demonceau, Jean-François
14:30-14:45	Life Cycle Cost and Life Cycle Assessment of Composite Bridge with Flat and Corrugated Webs	Fatima Hlal	Hlal, Fatima; Amani, Mozdeh; Nilsson, Peter; Hollberg, Alexander; Al-Emrani, Mohammad
14:45-15:00			

PS-1k | Welded Joints and Connections | Room 10 | Day 1 - 13:30-15:00

Chairpersons: Mareike von Arnim, Xiao-Lin Zhao

Time	Title	Speaker	Authors
13:30-13:45	Investigations on the material behaviour of weld seams for the use in finite element analyses	Ina Kuntsche	Kuntsche, Ina; Lange, Jörg
13:45-14:00	Experimental and Theoretical Research on Welded Aluminium X Joints	Semso Kalac	Kalač, Šemso; Radlbeck, Christina; Mensinger, Martin; Lucic, Dusko
14:00-14:15	Influence of semi-rigid joints on the seismic performance of single-storey steel frames	Greta Agata Venneri	Veneri, Greta Agata; De Matteis, Gianfranco; Brando, Giuseppe
14:15-14:30	I-beam-to-SHS column moment resisting joints using passing-through plates under equal bending moments	Mouad Madhouni	Madhouni, Mouad; Couchaux, Maël; Hjjaj, Mohammed; Kanyilmaz, Alper
14:30-14:45	I-beam-to-SHS column moment resisting joints using passing-through plates under opposite bending moments: numerical and analytical studies	Mouad Madhouni	Madhouni, Mouad; Couchaux, Maël; Hjjaj, Mohammed; Kanyilmaz, Alper
14:45-15:00	Study on load-carrying capacity of MAG butt-welded mixed connections with different steel strengths	Mareike von Arnim	von Arnim, Mareike; Eichler, Stefan; Brätz, Oliver; Hildebrand, Jörg; Kuhlmann, Ulrike; Bergmann, Jean Pierre; Flügge, Wilko

PARALLEL SESSION 2 (PS-2) - Day 1 - 15:30-17:00

PS-2a | Impact of new Eurocodes | Red Hall | Day 1 - 15:30-17:00

Chairpersons: Andreas Taras, Valentino Vigneri

Time	Title	Speaker	Authors
15:30-16:00	Eurocode 3 – Recent achievements and future tasks	Ulrike Kuhlmann / Markus Knobloch	-
16:00-16:15	General rules and rules for buildings in the new generation steel design code EN 1993-1-1	Bert Snijder	-
16:15-16:30	New aspects in prEN1990	Markus Feldmann	-
16:30-16:45	FEM modelling according to prEN 1993-1-14	László Dunai	-
16:45-17:00	Discussion moderated by the chairpersons		

PS-2b | Steel Composite Structures | Blue Hall | Day 1 - 15:30-17:00

Chairpersons: Katherine Cashell, Renata Obiala

Time	Title	Speaker	Authors
15:30-15:45	On the load-carrying behaviour of CSTC slim-floor beams	Robert Kroyer	Kroyer, Robert; Vigneri, Valentino; Taras, Andreas
15:45-16:00	Investigations on the system reliability of composite beams by transferring brittle and ductile Daniels systems to the shear connection	Kevin Wolters	Wolters, Kevin; Nonn, Jonas; Rittich, Nils; Feldmann, Markus
16:00-16:15	Feasibility study on an optical strain gage Based on Fluorescence Response of Graphene Quantum Dots	Krishna Murari	Liu, Haitao; Yang, Bo; Chen, Kang
16:15-16:30	Analytical investigations of seismic performance of different joint details for composite RCS frames	Krishna Murari	Murari, Krishna; Kumar, P. C. Ashwin; Shiradonkar, Saurabh
16:30-16:45	Investigations of the shear connectors and the load-bearing behaviour of steel cross-laminated timber composite beams	Noah Böhm	Böhm, Noah; Vogelsberg, Achim; Kühn, Bertram
16:45-17:00	Determination of overall factor for the application of the General Method based on plastic and strain-limited N-M-Interaction for composite compression members	Pëllumb Zogu	Zogu, Pëllumb; Schäfer, Markus

PS-2c | Bolted Connections | Room 1 | Day 1 - 15:30-17:00

Chairpersons: Dominik Jungbluth, Adam Jan Sadowski

Time	Title	Speaker	Authors
15:30-15:45	Numerical study on behaviour of T-stubs with bolts in tapped holes	Marko Ptiček	Ptiček, Marko; Skejić, Davor; Latour, Massimo; Rizzano, Gianvittorio
15:45-16:00	Block shear strength of high strength steel staggered bolted connections	Xuemei Lin	Lin, Xue-Mei; Yam, Michael C.H.; Chung, Kwok-Fai; Song, Yuchen
16:00-16:15	Stiffness of L-stubs loaded in compression	Maël Couchaux	Sarou, Lynita; Couchaux, Maël; Hjiatj, Mohammed; Sire, Stéphane; Douroux, Jean-François
16:15-16:30	Modelling of column base plate connections with plate stiffeners and non-proportional loading	Gaetano Della Corte	Della Corte, Gaetano; Cantisani, Gaetano
16:30-16:45	I-beam to RHS-column joints with welded studs under cyclic loading	Carlos López-Colina	García, Ismael; López-Colina, Carlos; Serrano López, Miguel Ángel; Wang, Yong
16:45-17:00	Full-Scale Composite Moment-Resisting Frame with Dissipative Bolted Connections under Monotonic Loads: Experimental versus Numerical Results	Rafaela-Florina Don	Don, Rafaela; Balaskas, Georgios; Vulcu, Cristian; Hoffmeister, Benno

PARALLEL SESSION 2 (PS-2) - Day 1 - 15:30-17:00

PS-2d | Machine Learning in Engineering Design and Construction | Room 2 | Day 1 - 15:30-17:00

Chairpersons: Junlin Heng, Andreas Müller

Time	Title	Speaker	Authors
15:30-15:45	Reliability assessment of steel-framed industrial buildings	Luís Simões da Silva	Simões da Silva, Luís; Ljubinković, Filip; Janković, Milena; Silva, Catarina; Gervasio, Helena; Conde, Jorge; Tankova, Trayana
15:45-16:00	Application of machine learning approaches for modelling crack growth rates	Mohamed El Amine Ben Seghier	Ben Seghier, Mohamed El Amine; Plevris, Vagelis
16:00-16:15	Predicting Flush End Plate Connections Response Using Artificial Neural Networks	Ahmed Elkady	Georgiou, Gregory; Elkady, Ahmed
16:15-16:30	Machine learning-based predictions of buckling behaviour of cold-formed steel structural elements	Iman Hajirasouliha	Mojtabaei, Seyed Mohammad; Becque, Jurgen; Khandan, Rasoul; Hajirasouliha, Iman
16:30-16:45	A framework for multi-element hybrid simulation of steel braced frames using model updating	Anahita Hosseini	Hosseini, Anahita Sadat; Mokhtari, Fardad; Imanpour, Ali
16:45-17:00			

PS-2e | Stability and Plasticity in Plates and Shells | Room 3 | Day 1 - 15:30-17:00

Chairpersons: Markus Kettler, Haohui Xin

Time	Title	Speaker	Authors
15:30-15:45	Shear Buckling Behavior of Tapered Steel Plate Girders with Sinusoidally Corrugated Webs	Jian Wang	Wang, Jian; Li, Zheng; Pasternak, Hartmut; Euler, Mathias
15:45-16:00	Imperfection Sensitivity of Plastic Shear Buckling Behaviour in Corrugated Web Stainless Steel beams	Mozhdeh Amani	Amani, Mozhdeh; Al-Emrani, Mohammad; Khalili, Shahriar
16:00-16:15	Buckling resistance of stiffened panels subjected to constant transverse compression stresses	Vahid Pourostad	Pourostad, Vahid; Kuhlmann, Ulrike
16:15-16:30	Sandwich Panels as Building Envelope under In-Plane Deformation: Experimental Program and Monotonic / Cyclic Response	Lara Bittner	Bittner, Lara; Vulcu, Cristian; Hoffmeister, Benno
16:30-16:45	Insights into the occurrence of transverse bending stresses in web plates of crane runway girders	Paul Zauchner	Zauchner, Paul; Kettler, Markus; Unterweger, Harald
16:45-17:00	An analytical design approach for outstand steel plates in compression	Jurgen Becque	Becque, Jurgen

PS-2f | Stability of Cross-Sections, Members and Frames | Room 5 | Day 1 - 15:30-17:00

Chairpersons: Aleksander Kozłowski, Primož Može

Time	Title	Speaker	Authors
15:30-15:45	Study on Global Imperfection of Modular integrated Construction Structures for Second-order Analysis	Yueyang Ding	Ding, Yue-Yang; Liu, Si-Wei; Liu, Yao-Peng; Chen, Wen-Feng; Chan, Siu-Lai
15:45-16:00	Influence of flanges on the elastic buckling strengths of horizontally curved steel I-girders	Aanandh Nandakumar	Nandakumar, Aanandh; Subramanian, Lakshmi
16:00-16:15	Influence of imperfections in the design of crane runway I-beams	Michal Kovac	Kováč, Michal; Ároch, Rudolf
16:15-16:30	On the Capacity of Beams with U Cross Section Subjected to Bending and Torsion	Caridad Moscoso	Moscoso, Caridad; Kraus, Matthias
16:30-16:45	Experimental Investigation on Buckling Behavior of soil-embedded Piles	Hagen Balscheit	Balscheit, Hagen; Victor, Albrecht; Thiele, Marc; Cuellar, Pablo; Baeßler, Matthias; Lüddecke, Falk
16:45-17:00			

PARALLEL SESSION 2 (PS-2) - Day 1 - 15:30-17:00

PS-2g | Cold-Formed Structures | Room 6 | Day 1 - 15:30-17:00

Chairpersons: Luigi Fiorino, Jörg Lange

Time	Title	Speaker	Authors
15:30-15:45	Novel method for the prediction of load bearing capacity of compressed C channels considering interaction of buckling modes	Bálint Vaszilievits-Sömjén	Vaszilievits-Sömjén, Bálint; Papp, Ferenc
15:45-16:00	Lateral-torsional buckling experiments of built-up section CFS beams	Kim Rasmussen	Ma, Di; Rasmussen, Kim; Zhang, Hao
16:00-16:15	Proposal for determination of wind action on steel rack supported warehouses during execution	José Henriques	Henriques, José; Marra, Antonino Maria; Van Vugt, Glenn; Bartoli, Gianni; Degée, Hervé
16:15-16:30	Performance evaluation of cold-formed steel spot weld connections	Andrea Rajić	Rajić, Andrea; Lukačević, Ivan; Ćurković, Ivan; Žuvelek, Vlaho
16:30-16:45	Structural Behaviour of Built-Up Battered Cold-Formed Steel Columns	Hélder David da Silva Craveiro	Craveiro, Hélder D.; Rahnavard, Rohola; Santiago, Aldina; Laím, Luís; Simões, Rui
16:45-17:00	Experimental investigation of the service shear strength of the welded clip-angle connector in a CFS beam-to-column connection	Mahendrakumar Madhavan	Madheswaran, Ranjithkumar; Mallepogu, Nagaraju; Madhavan, Mahendrakumar

PS-2h | High-strength, Stainless and other Special Steels | Room 7 | Day 1 - 15:30-17:00

Chairpersons: Sheida Afshan, Gang Shi

Time	Title	Speaker	Authors
15:30-15:45	Monotonic and cyclic behaviour of 6082-T6 aluminium alloy	Evangelia Georgantzia	Georgantzia, Evangelia; Kashani, Mohammad M
15:45-16:00	Material characterisation tests of ultra-high-strength steels S960QL and S1100M under natural fire conditions	Sara Uszball	Uszball, Sara; Knobloch, Markus
16:00-16:15	Design optimisation of welded I-beams made of high strength steels	Loris Saufnay	Saufnay, Loris; Renotte, Tom; Mahieu, Ludovic; Demonceau, Jean-François
16:15-16:30	Experimental behaviour of cold-formed stainless steel cruciform section columns	Jelena Dobrić	Dobrić, Jelena; Fric, Nenad; Naraidoo, Elenor; Rossi, Barbara
16:30-16:45	Geometric imperfection measurement on welded hybrid steel box section girders	Balázs Somodi	Somodi, Balázs; Wassfee, Dhiaa; Kövesdi, Balázs
16:45-17:00			

PS-2i | Novel Structural Solutions | Room 8 | Day 1 - 15:30-17:00

Chairpersons: Massimo Latour, Robert Jankowski

Time	Title	Speaker	Authors
15:30-15:45	Seismic assessment of the steel Moment Resisting Frame equipped with friction beam-to-column joints	Mario D'Aniello	Poursadrollah, Arash; D'Aniello, Mario; Tartaglia, Roberto; Landolfo, Raffaele
15:45-16:00	Design to manufacture of fully stressed curved structures through elastic deformation of thin steel sheets with interlocking connections	Seyed Mobin Moussavi	Moussavi, Seyed Mobin; Lienhard, Julian; Liu, Dongyuan
16:00-16:15	Optimisation methods for the design of advanced 3d-printed metal seismic dissipation devices	Francesca Romana Andreacola	Andreacola, Francesca Romana; Brando, Giuseppe
16:15-16:30	Experimental and numerical study of a damage-free self-centring for seismic resilient EBFs	Fabio Freddi	Lettieri, Annarosa; Freddi, Fabio; Latour, Massimo
16:30-16:45	Structural Steel Fabrication with Mixed Reality	Hannah Blum	Blum, Hannah B.; Kraus, William
16:45-17:00			

PARALLEL SESSION 2 (PS-2) - Day 1 - 15:30-17:00

PS-2j | Sustainability Assessment and Design | Room 9 | Day 1 - 15:30-17:00

Chairpersons: Helena Gervasio, René Oly

Time	Title	Speaker	Authors
15:30-15:45	Metal additively versus conventionally manufactured structures – An environmental life cycle assessment	Nicolas Hadjipantelis	Hadjipantelis, Nicolas; Shah, Izhar Hussain; Walter, Lulu; Myers, Rupert J.; Gardner, Leroy
15:45-16:00	Life-Cycle-Assessment of purlin systems: the influence of the low carbon high strength steels in CO2 equivalent emissions	José Humberto Matias de Paula Filho	Matias de Paula Filho, José Humberto; Guimarães, Leonardo; Guth, Jérôme; Marioni, Luca
16:00-16:15	Innovative bio-based steel envelope systems	Thibault Renaux	Izabel, David; Renaux, Thibault; Gelders, Tommy; Eizaguirre-Iribar, Arritokieta; Lange, Jörg; Pradhan, Eric Man; Gervasio, Helena; Soares, José Hector; Martins, Claudio; Spagni, Daniel; Brutin, Alexis; Chi,
16:15-16:30	Assessment of Embodied Carbon in a Tied-Arch Bridge	Burak Karabulut	Ruck, Natalie; Naraiddoo, Elenor; Liu, Chengying; Kamali, Mohammadreza; Karabulut, Burak; Rossi, Barbara
16:30-16:45			
16:45-17:00			

PS-2k | Welded Joints and Connections | Room 10 | Day 1 - 15:30-17:00

Chairpersons: Justus Voelkel, Mareike von Arnim

Time	Title	Speaker	Authors
15:30-15:45	Innovative one-way connections between I-beams and CHS columns	Rajarshi Das	Das, Rajarshi; Kanyilmaz, Alper; Madhouni, Mouad; Degee, Herve
15:45-16:00	Hysteretic behaviour of welded connections with highly inelastic panel zones	Andronikos Skiadopoulos	Skiadopoulos, Andronikos; Lignos, Dimitrios G. ; Arita, Masaki; Hiroshima, Satoru
16:00-16:15	Tensile behaviour of welded S700 rectangular hollow section X-joints	Hagar El Bamby	Yan, Rui; El Bamby, Hagar; Veljkovic, Milan
16:15-16:30	Developed numerical Analysis of Residual Stress caused by Welding and Cutting in Steel Structures	Zheng Li	Li, Zheng; Xu, Siying; Geißler, Karsten; Wang, Jian; Pasternak, Hartmut
16:30-16:45	Strength of connections between SHS columns and through plates	Sabatino Di Benedetto	Sato, Atsushi; Latour, Massimo; de la Peña, Amparo; Di Benedetto, Sabatino; Francavilla, Antonella Bianca; Rizzano, Gianvittorio
16:45-17:00	Flexural resistance of 3D cut welded joints between SHS columns and through I-beams	Gianvittorio Rizzano	Sato, Atsushi; Latour, Massimo; de la Peña, Amparo; Di Benedetto, Sabatino; Francavilla, Antonella Bianca; Rizzano, Gianvittorio

ECCS Awards | Red Hall | Day 1 - 17:15-18:15

EUROSTEEL 2023 - DAY 2

Keynote lectures | Red Hall | Day 2 - 9:00-10:00

Chairpersons: Luís Simões da Silva, Johan Maljaars

Time	Title	Speaker
09:00-09:30	Keynote lecture Steel and composite bridges – Enabling sustainable solutions	Ulrike Kuhlmann
09:30-10:00	Keynote lecture Recent progress in computational predictions on fatigue and fracture resistance of steel connection joints	Haohui Xin

PARALLEL SESSION 3 (PS-3) - Day 2 - 10:30-12:30

PS-3a | Bolted Connections | Red Hall | Day 2 - 10:30-12:30

Chairpersons: Vincenzo Piluso, José Henriques

Time	Title	Speaker	Authors
10:30-10:45	Experimental Investigations on load-bearing Capacity and characteristic Preload of Lockstud systems	Melanie Hagemann	Hagemann née Meyer, Melanie; Schwarz, Mathias; Glienke, Ralf; Schwerdt, Daniela; Henkel, Knuth-Michael
10:45-11:00	A generalised mechanical model for the characterisation of steel joints	Tudor Golea	Golea, Tudor; Bodson, Romain; de Ville de Goyet, Vincent; Jaspard, Jean-Pierre; Demonceau, Jean-François
11:00-11:15	Use of adhesives in preloaded bolted connections for hot-dip galvanised constructions	Justus Mantik	Mantik, Justus; Glienke, Ralf; Denkert, Christian; Dörre, Maik; Vallée, Till; Fricke, Holger; Henkel, Knuth-Michael
11:15-11:30	Numerical analysis of the component column web in tension with additional plates: stiffness evaluation	Manuel Lopez Lopez	López, Manuel; Loureiro, Alfonso; Gutierrez, Ruth M.; Reinos, José M.
11:30-11:45	Further development of detail categories for bolt-assemblies subjected to normal stress in steel constructions	Mathias Schwarz	Glienke, Ralf; Schwarz, Mathias; Hagemann née Meyer, Melanie; Seidel, Marc; Dörre, Maik
11:45-12:00	Seismic characterisation of aluminium fusible links in single-storey steel buildings	Sara Pasquali	Pasquali, Sara; Tondini, Nicola; Zanon, Gabriele
12:00-12:15	Accuracy assessment of predictive models for semi-rigid extended end-plate connections	Zizhou Ding	Ding, Zizhou; Elkady, Ahmed
12:15-12:30	Elastic behavior of riveted double angle connections in tension	Lynita Sarou	Sarou, Lynita; Couchaux, Maël; Hjjaj, Mohammed; Sire, Stéphane; Douroux, Jean-François

PS-3b | Steel Composite Structures | Blue Hall | Day 2 - 10:30-12:30

Chairpersons: Teodora Bogdan, Benno Hoffmeister

Time	Title	Speaker	Authors
10:30-10:45	Effects of section slenderness and concrete strength on the cross-sectional behaviour of lightweight concrete-filled cold-formed built-up box sections	Yie Sue Chua	Teoh, Keat Bin; Chua, Yie Sue
10:45-11:00	Feasibility study on stub and slender veneer-wrapped steel columns	Valentino Vigneri	Vigneri, Valentino; Taras, Andreas
11:00-11:15	Development of Novel Inter-module Connection for Composite Modular Tall Buildings	Arjun Kandel	Kandel, Arjun; Thai, Huu-Tai; Ngo, Tuan
11:15-11:30	Finite Element Analysis on Flexural Bearing Performance of Innovative Closed Profiled Steel Sheeting-Concrete Composite Slab	Ding Lu	Ding, Lu; Yongjiu, Shi; Dong, Liu
11:30-11:45	Estimation of maximum admissible precambering of steel beams	Rui Matos	Matos, Rui; Candeias, Miguel; Craveiro, Hélder
11:45-12:00	Bearing capacity of headed studs under combined tension and shear loading in composite beams with large web openings	Manuel Risch	Risch, Manuel; Kurz, Wolfgang; Wolters, Kevin; Janiak, Till; Christou, Georgios
12:00-12:15	Parametric design and dynamic analysis of a hybrid steel-FRP bridge	Kees van IJselmuiden	van IJselmuiden, Kees; van Schaik, Rik; Cornelissen, Lieuwe; de Leur, Merijn; Schakel, Dennis; Christensson, Pontus
12:15-12:30	Tensile behavior of Anchored Stainless Steel T-head Blind Bolts within Concrete-Filled Steel Square Tubes	Xiao Lin Zhao	Li, Ying-Lei; Huang, Ming-Xian; Zhao, Xiao-Lin

PARALLEL SESSION 3 (PS-3) - Day 2 - 10:30-12:30

PS-3c | Fatigue and Fracture | Room 2 | Day 2 - 10:30-12:30

Chairpersons: Helen Bartsch, Elyas Ghafoori

Time	Title	Speaker	Authors
10:30-10:45	Fatigue improvement of rib-to-deck welded joints using adhesively bonded steel patches - LEFM-based parametric study	Xudong Wang	Wang, Xudong; Leonetti, Davide; Miao, Changqing; Snijder, H.H. (Bert)
10:45-11:00	Generic method of local thickening in shell element FEM models for orthotropic bridge decks	Jorrit Rodenburg	Rodenburg, Jorrit D.; Hengeveld, Sjoerd T.; Wijnbeld, Bas M.M.; Maljaars, Johan
11:00-11:15	Review of the damage equivalence factors for steel railway bridges in the Eurocodes	Stefan Martinolli	Martinolli, Stefan; Kroyer, Robert; Taras, Andreas
11:15-11:30	Fatigue behavior at flange thickness transitions with cope holes – design model for engineering practice	Christoph Derler	Derler, Christoph; Unterweger, Harald; Knobloch, Markus; Röscher, Stefanie
11:30-11:45	Miniature specimen tests and fracture model of heat affected zone material	Kim Rasmussen	Liu, Xiaofan; Yan, Shen; Rasmussen, Kim J.R.
11:45-12:00	Fatigue stress concentrations analysis of real corroded steel structures based on replica imprints	Mohammad Sulaiman Shojai	Shojai, Sulaiman; Schaumann, Peter; Momber, Andreas; Ghafoori, Elyas
12:00-12:15	Fatigue strength of the joint of steel cantilevers in composite bridges	Raphael Erlemann	Erlemann, Raphael; Kraus, Josef Karl; Geissler, Karsten
12:15-12:30	Fatigue performance evaluation of stiffener-to-deck plate weld in orthotropic steel decks based on generative adversarial network	Bingfeng Liu	Liu, Bingfeng; Xin, Haohui; Liu, Jieli; Veljkovic, Milan

PS-3d | Stability and Plasticity in Plates and Shells | Room 3 | Day 2 - 10:30-12:30

Chairpersons: Anna-Lena Bours, João Pedro Martins

Time	Title	Speaker	Authors
10:30-10:45	Linear buckling analysis in the design of triangular bracket plates	Martin Vild	Dowswell, Bo; Vild, Martin
10:45-11:00	Creation of design models of silos for grain storage under conditions of non-axisymmetric actions	Volodymyr Semko	Makhinko, Anton; Makhinko, Nataliia; Semko, Volodymyr
11:00-11:15	Length and Boundary Condition Effects in the Buckling of Cylinders Under Different Load Combinations	Hussain Al-Lawati	Al-Lawati, Hussain
11:15-11:30	Numerical study on steel plate girders - Intermediate transverse stiffeners axial force	Sérgio Nascimento	Nascimento, Sérgio; Pedro, José Oliveira; Kuhlmann, Ulrike
11:30-11:45	Analytical and numerical calculation of the buckling stress for panels with closed-section stiffeners	Primož Može	Piculin, Sara; Pourostad, Vahid; Može, Primož; Kuhlmann, Ulrike
11:45-12:00	Plate and stiffener buckling in transversely loaded steel panels	Svein-Rune Kleppe	Kleppe, Svein-Rune; Aalberg, Arne
12:00-12:15	On the optimal shape and placement of longitudinal stiffeners in longitudinally stiffened plates	Ghaith Atef Aref Abu Reden	Abu Reden, Ghaith A.; Adany, Sandor
12:15-12:30			

PS-3e | Bridge Construction and Structural Design | Room 5 | Day 2 - 10:30-12:30

Chairpersons: Bernhard Hauke, Alain Nussbaumer

Time	Title	Speaker	Authors
10:30-10:45	Opening gates in flood protection barriers along the North Sea Coast	Philippe van Bogaert	Van Bogaert, Philippe
10:45-11:00	Gerda Tora bridge - a semi integral composite bridge	Lieuwe Cornelissen	Boeters, Ton; Cornelissen, Lieuwe; Hesselink, Bert
11:00-11:15	Bulbs versus Trough	Ernst Klamer	Hesselink, Bert; Klamer, Ernst; Vollema, Nynke; Hiddingh, Jan; Wijnbeld, Bas
11:15-11:30	Specific distortion-induced fatigue failure at main girders of a railway bridge – efficiency of different reinforcements based on strain measurements	Harald Unterweger	Unterweger, Harald; Derler, Christoph
11:30-11:45	Orthotropic composite slabs for road bridges	Richard Stroetmann	Stroetmann, Richard; Wisniewski, Joachim; Mansperger, Tobias
11:45-12:00	Live Load Structural Index study on Small and Medium Span Steel-Concrete Composite Bridges	Zhihua Xiong	Xiong, Zhihua; Pan, Zhenhua; Mou, Xulin; Liu, Xuyao
12:00-12:15	Investigations on the historical Széchenyi chain bridge	Balázs Kövesdi	Kövesdi, Balázs; Kollár, Dénes; Szabó, Bence; Dunai, László
12:15-12:30	System redundancy of steel I-girder bridges and proposal of a system factor for load rating	Yoshiaki Okui	Okui, Yoshiaki; Denda, Makoto; Kumaki, Kazuki; Sakuma, Satoshi

PARALLEL SESSION 3 (PS-3) - Day 2 - 10:30-12:30

PS-3f | Cold-Formed Structures | Room 6 | Day 2 - 10:30-12:30

Chairpersons: Marios-Zois Bezas, Luigi Fiorino

Time	Title	Speaker	Authors
10:30-10:45	Structural analysis of rack upright frames under a pure compression load by means of a nonlinear Generalized Beam Theory analysis	Jordi Bonada	Bonada, Jordi; Casafont, Miquel; Bové, Oriol; López, Ignasi
10:45-11:00	Shear Behaviour of Novel U-connector in CFS Truss-to-Column Connection	Lazar Lukačević	Lukačević, Lazar; Krolo, Paulina; Bakran, Antonio; Palijan, Ivan
11:00-11:15	Method for determining the cross-sectional resistance of transversely corrugated cold-formed steel arches under compression	Abdullah Al-Maisari	Al-Maisari, Abdullah; Ma, Zhongcheng; Havula, Jarmo; Lu, Wei; Puttonen, Jari
11:15-11:30	Simplified nonlinear analysis of doubly corrugated cold-formed steel arches	Miquel Casafont	Casafont, Miquel; Bové, Oriol; Marimon, Frederic; Ferrer, Miquel; Soltanalipour, Milad
11:30-11:45	Experimental characterisation of connection behaviour for cold-formed steel panels sheathed with calcium silicate boards	Nikolaos Ringas	Ringas, Nikolas; Huang, Yuner
11:45-12:00	Influence of Profiled Faces on the Overall Shear Performance of Strongly Profiled Sandwich Panel with Mineral Wool Core	Shekhar Silwal	Shekhar, Silwal; Mela, Kristo; Ma, Zhongcheng
12:00-12:15	Comparison between numerical models intended for unbraced multiple bay pallet racks	Oriol Bové	Bové, Oriol; Casafont, Miquel; Bonada, Jordi; López-Almansa, Francesc
12:15-12:30			

PS-3g | High-strength, Stainless and other Special Steels | Room 7 | Day 2 - 10:30-12:30

Chairpersons: Fangxin Hu, Jeffrey Packer

Time	Title	Speaker	Authors
10:30-10:45	On predicting the behaviour of an iron-based shape memory alloy with the Ramberg-Osgood model	Vlad Silvestru	Silvestru, Vlad-Alexandru; Deng, Zhikang; Taras, Andreas
10:45-11:00	Testing of Post-fire Brittleness for Certain Standard Duplex and Lean Duplex Stainless Steel Grades	Mariusz Maslak	Maslak, Mariusz; Pazdanowski, Michal; Stankiewicz, Marek; Zajdel, Paulina
11:00-11:15	Deformation behaviour of high-strength steel welds using DIC	František Wald	Ghimire, Abhishek; Wald, František
11:15-11:30	Reliability Assessment of Eurocode 3 Design Rules for the Minor-Axis Buckling of HSS I-section Columns	José Osvaldo Ferreira Filho	Ferreira Filho, José Osvaldo; Simões da Silva, Luís; Tankova, Trayana; Carvalho, Hermes
11:30-11:45	Behaviour, finite element modelling and design of high strength steel homogeneous and hybrid welded I-section beams	Yufei Zhu	Zhu, Yufei; Yun, Xiang; Gardner, Leroy
11:45-12:00	Experimental investigations of residual stresses in thick high-strength steel plates	Michael Schäfers	Schäfers, Michael; Müller, Eckehard; Mensinger, Martin
12:00-12:15	Residual stresses in cold-formed square hollow sections of high strength steel	Iuliia Petukhovskaia	Petukhovskaia, Iuliia; Saremi, Pooya; Lu, Wei; Puttonen, Jari
12:15-12:30			

PS-3h | Fire Resistance and Structural Robustness | Room 8 | Day 2 - 10:30-12:30

Chairpersons: Merih Kucukler, Filip Ljubinkovic

Time	Title	Speaker	Authors
10:30-10:45	Experimental and numerical investigation of reduced web section connections in fire	Katherine Cashell	Yabari, Oday; Alanen, Mika; Malaska, Mikko; Cashell, Katherine A.
10:45-11:00	Experimental testing of liner tray walls subjected to near field blast	Florea Dinu	Dinu, Florea; Neagu, Calin; Laszlo, Robert; Ghicloi, Emilian; Senila, Mihai
11:00-11:15	High temperature push-out tests on demountable shear connectors of steel-concrete composite beams	Manuel L. Romero	Mansilla, Roberto; Espinós, Ana; Paya-Zaforteza, Ignacio; Odenbreit, Christoph; Romero, Manuel L.
11:15-11:30	Experimental evaluation of the ultimate strength of wall sandwich panels under transverse loads	Florea Dinu	Dinu, Florea; Neagu, Calin; Senila, Mihai; Dubina, Dan; Ungureanu, Viorel
11:30-11:45	Predictive modelling of the cross-sectional reduction of smoke extraction ducts under fire resistance test	Ignasi Mundó	Mundó, Ignasi; Ichard, Mathieu; Caner, Ferhun; Mateo, Antonio
11:45-12:00	Modelling of bolted joints in fire using the component-based finite element method	Batuhan Der / František Wald	Der, Batuhan; Wald, František; Vild, Martin
12:00-12:15	Robustness evaluation and design of steel and steel-concrete buildings according to current standards and recent research results	Miguel Candeias	Candeias, Miguel; Obiala, Renata; Demonceau, Jean-François; Dinu, Florea; Marginean, Ioan; Weynand, Klaus
12:15-12:30	A pyrolysis model for steel-insulation sandwich building façade systems under fire	Qingfeng Xu	Xu, Qingfeng; Hofmeyer, Hèrm; Maljaars, Johan; van Herpen, Ruud A.P.

PARALLEL SESSION 3 (PS-3) - Day 2 - 10:30-12:30

PS-3i | Seismic Resistance, Dynamics and Vibration | Room 9 | Day 2 - 10:30-12:30

Chairpersons: Mirela Adriana Chesoan, Massimo Latour

Time	Title	Speaker	Authors
10:30-10:45	Hybrid Coupled Walls with Replaceable Shear Links: Technical Solution and Seismic Performance of a 3D Multi-Story Building	Mihai Cristian Vulcu	Vulcu, Cristian; Hoffmeister, Benno; Bimbli, Dorina; Das, Rajarshi; Degée, Hervé
10:45-11:00	Design and analysis of steel-concrete hybrid coupled walls with hinged base and corner components	Alessandro Zona	Scozzese, Fabrizio; Ceccolini, Nicola; Zona, Alessandro; Dall'Asta, Andrea; Leoni, Graziano; Degée, Hervé
11:00-11:15	Innovative hybrid coupled wall systems to resist seismic action – HYCAD	Hervé Degée	Das, Rajarshi; Morelli, Francesco; Zona, Alessandro; Hoffmeister, Benno; Vulcu, Cristian; Degée, Hervé
11:15-11:30	Experimental behaviour of optimized hybrid coupled shear walls	Agnese Natali	Natali; Agnese; Morelli, Francesco; Salvatore, Walter
11:30-11:45	Seismic performance of hybrid coupled shear walls	Francesco Morelli	Morelli, Francesco; Natali, Agnese; Poggi, Gabriele; Salvatore, Walter
11:45-12:00	Effective seismic retrofitting concept for existing car park buildings in moderate seismic regions	Georgios Balaskas	Terehovich, Vladislav; Balaskas, Georgios; Don, Rafaela; Hoffmeister, Benno
12:00-12:15	Seismic performance assessment of self-centering hybrid coupled walls: an 8-story case study structure	Mojtaba Farahi	Farahi, Mojtaba; Freddi, Fabio; Latour, Massimo
12:15-12:30			

PS-3j | Welded Joints and Connections | Room 10 | Day 2 - 10:30-12:30

Chairpersons: Aldina Maria da Cruz Santiago, Sjors van Es

Time	Title	Speaker	Authors
10:30-10:45	On the assessment of non-conformities - Is execution of steel structures a craft with zero defect tolerance?	Michael Volz	Volz, Michael; Spannaus, Max; Nagel, Sven
10:45-11:00	Geometric tolerances of welded connections with inelastic panel zones	Ce Wen	Wen, Ce; Skiadopoulos, Andronikos; Lignos, Dimitrios G.
11:00-11:15	Welding under service conditions - Influence of different boundary conditions during welding	Florian Begemann	Begemann, Florian; Unglaub, Julian; Thiele, Klaus
11:15-11:30	The influence of axial misalignment on the load-bearing capacity of butt welded joints	Justus Voelkel	Voelkel, Justus; Bartsch, Helen; Feldmann, Markus
11:30-11:45	The Influence of Steel Variability on the Reliability of Welded Beam-to-Column Joints	Anđelo Valčić	Skejić, Davor; Valčić, Anđelo; Žuvelek, Vlaho; Čudina, Ivan
11:45-12:00	Innovative hollow section column-splice connections resorting to laser cutting	Rajarshi Das	Das, Rajarshi; Kanyilmaz, Alper; Couchaux, Maël; Degée, Hervé
12:00-12:15	New analytical approach for predicting the plastic shear resistance of the panel zone in steel joints	Jean-François Demonceau	Corman, Adrien; Jaspert, Jean-Pierre; Demonceau, Jean-François
12:15-12:30			

PARALLEL SESSION 4 (PS-4) - Day 2 - 14:00-15:30

PS-4a | Bolted Connections | Red Hall | Day 2 - 14:00-15:30

Chairpersons: Rajarshi Das, Gianvittorio Rizzano

Time	Title	Speaker	Authors
14:00-14:15	Fatigue performance of preloaded bolted connection with oversized holes	Angeliki Christoforidou	Christoforidou, Angeliki; Basker, Abishek; Barelts, Eric; Kavoura, Florentia; Pavlovic, Marko
14:15-14:30	Hysteresis of Extended Endplate Connections without Reinforcement of Panel Zone	Kyounchan Kang	Oh, Sanghoon; Kang, Kyounchan; Park, Jaehan; Dahye, Yoo
14:30-14:45	Experimental investigation on stress state and deformation in bolts through tightening of perfect flange connections	Christopher Schierl	Schierl, Christopher; Stang, Andre; Ghafoori, Elyas; Schumann, Peter
14:45-15:00	A comparative experimental study on blind-bolted beam connections to square steel tubular columns filled with polyurethane foam or concrete	Konstantinos Skalomenos	Skalomenos, Konstantinos; Gunes, Sahin; Taleb, Farzad; Theofanous, Marios
15:00-15:15	Numerical Behaviour of Blind-Bolted Beam Connections to Square Hollow Sections with Different Infills	Marios Theofanous	Gunes, Sahin; Theofanous, Marios; Skalomenos, Konstantinos; Baniotopoulos, Charalambos
15:15-15:30	Seismic Performance of Brace Middle-Connection in Steel Concentrically Braced Frames with X-Bracing	Pablo Cano	Cano, Pablo A.; Imanpour, Ali; Tremblay, Robert

PS-4b | Steel Composite Structures | Blue Hall | Day 2 - 14:00-15:30

Chairpersons: Christoph Odenbreit, Valentino Vigneri

Time	Title	Speaker	Authors
14:00-14:15	Modelling and response of composite steel-concrete members under cyclic loading	Ahmed Elghazouli	Sahin, Burak; Bravo-Haro, Miguel Angel; Elghazouli, Ahmed Y.
14:15-14:30	The FAILNOMORE project - Practice-oriented design recommendations against progressive collapse in steel and steel-concrete buildings	Jean-François Demonceau	Demonceau, Jean-François; Golea, Tudor; Elghazouli, Ahmed; Santiago, Aldina; Dinu, Florea; Baldassino, Nadia; Kuhlmann, Ulrike; Obiala, Renata; Weynand, Klaus
14:30-14:45	Load bearing behaviour of concrete encased composite columns with high-performance materials	Teodora Bogdan	Bogdan, Teodora; Ergun, Ozgun; Schurgacz, Przemyslaw; Anwaar, Omer M.; Risch, Manuel; Schäfer, Markus; Knobloch, Markus; Kurz, Wolfgang
14:45-15:00	Load introduction for concrete-encased steel composite columns using high-performance materials	Teodora Bogdan	Bogdan, Teodora; Risch, Manuel; Ergun, Ozgun; Anwaar, Omer M.; Schurgacz, Przemyslaw; Kurz, Wolfgang; Schäfer, Markus; Knobloch, Markus
15:00-15:15	Experimental determination of the fatigue behaviour of dowel strips in ortho-composite slabs for road bridges	Joachim Wisniewski	Wisniewski, Joachim; Stroetmann, Richard
15:15-15:30	Numerical Modeling of Steel-Concrete Composite Girders Exposed to Web Shear Buckling	Mehmed Numanovic	Numanovic, Mehmed; Knobloch, Markus

PS-4c | Fatigue and Fracture | Room 2 | Day 2 - 14:00-15:30

Chairpersons: Helen Bartsch, Junlin Heng

Time	Title	Speaker	Authors
14:00-14:15	Fatigue strength assessment of riveted shear splice	Mario D'Aniello	Lettieri, Annarosa; Latour, Massimo; Rizzano, Gianvittorio; Milone, Aldo; D'Aniello, Mario; Landolfo, Raffaele
14:15-14:30	Development of an automated quality assurance approach for welded joints	Christian Dănekas	Dănekas, Christian; Schumann, Peter; Ghafoori, Elyas; Heikebrügge, Steffen; Heide, Klaas Maximilian; Breidenstein, Bernd
14:30-14:45	Fatigue verification concept for details containing weld imperfections	Helen Bartsch	Bartsch, Helen; Feldmann, Markus
14:45-15:00	The influence of rib distortion on the fatigue resistance of orthotropic plated bridge decks	Philippe van Bogaert	Van Bogaert, Philippe; Van Staen, Gilles; De Backer, Hans
15:00-15:15	Changes to the lambda model for fatigue loads on steel railway bridges in Europe	Johan Maljaars	Maljaars, Johan; Verdenius, Stefan
15:15-15:30	Remote monitoring system for an onshore steel wind turbine	Marco Simoncelli	Simoncelli, Marco; Zucca, Marco; Ghilardi, Matteo

PARALLEL SESSION 4 (PS-4) - Day 2 - 14:00-15:30

PS-4d | 3D Printing and Additive Manufacturing | Room 3 | Day 2 - 14:00-15:30

Chairpersons: Leroy Gardner, Alper Kanyilmaz

Time	Title	Speaker	Authors
14:00-14:15	Stiffening of slender plates using Wire Arc Additive Manufacturing	Trayana Tankova	Tankova, Trayana; Veljkovic, Milan
14:15-14:30	Wire-and-Arc Additive Manufacturing for lattice steel structures: overview of the experimental characterization on dot-by-dot rods	Lidiana Arrè	Arrè, Lidiana; Laghi, Vittoria; Palermo, Michele; Gasparini, Giada; Trombetti, Tomaso
14:30-14:45	Serial Uniqueness: Strengthening Standard Steel Profiles with WAAM Technology	Linus Paul Schmitz	Kloft, Harald; Schmitz, Linus Paul ; Babovic, Neira
14:45-15:00	Additive Manufacturing of a Steel Splice Joint for Tubular Elements in a Modular Wind Tower	Mariela Mendez Morales	Mendez Morales, Mariela; Tankova, Trayana; Branco, Ricardo; Rebelo, Carlos
15:00-15:15	Experimental and numerical assessment of the topological optimization of additively manufactured T-joints	Kaïke Monteiro	Monteiro, Kaïke; Zhu, Carlos; Tankova, Trayana; Santos, Ana Francisca; Simões da Silva, Luís;
15:15-15:30			

PS-4e | Bridge Construction and Structural Design | Room 5 | Day 2 - 14:00-15:30

Chairpersons: Balázs Kövesdi, Alain Nussbaumer

Time	Title	Speaker	Authors
14:00-14:15	Development of Improved Equations for Live Load Moment Distribution in Interior Girders of Shallow Steel Tub Girder Bridges	Karl Barth	Barth, Karl; Michaelson, Gregory; Pyrialakou, V. Dimitra; Woldegabriel, Brook; Mason, Joshua
14:15-14:30	New Boca del Cerro Bridge at Section 1 of the "Tren Maya" railway	Miguel Ortega Cornejo	Ortega Cornejo, Miguel; Atanasio Utrilla, Pedro; Ugarte Gozález, Jokin; Ricón Crespo, Kevin
14:30-14:45	Urban Viaducts at Section 1 of the "Tren Maya" railway	Miguel Ortega Cornejo	Ortega Cornejo, Miguel; Atanasio Utrilla, Pedro; Ugarte González, Jokin; Suz Maroto, Alberto;
14:45-15:00	Non-Destructive Testing of Bridge Cables using MIT	Daniel Ruff	Ruff, Daniel B.; Eirich, Hans
15:00-15:15	The cable-stayed footbridge in Prague - Radotín	Vladimír Janata	Janata, Vladimír; Lahodný, Jiří; Pecina, Jan
15:15-15:30	Track-Bridge Interaction: Influence of Transition Zone on the Stability of Continuous Welded Rail	Akhil Upadhyay	C K, Ali Mubarak; Upadhyay, Akhil

PS-4f | Cold-Formed Structures | Room 6 | Day 2 - 14:00-15:30

Chairpersons: Bert Snijder, Kim Rasmussen

Time	Title	Speaker	Authors
14:00-14:15	Experimental Investigation of Sheathed Cold-Formed Steel Sigma Studs Under Compression Loading	Amirmohammad Yousefi	Yousefi, Amir M.; Samali, Bijan; Yu, Yang
14:15-14:30	Web Bearing Test of Cold-Formed Austenitic Stain-less-Steel Channels Under Interior Loading	Amirmohammad Yousefi	Yousefi, Amir M.; Samali, Bijan; Yu, Yang
14:30-14:45	Lateral performance of cold-formed steel OSB-sheathed stud wall panels	Iman Hajirasouliha	Mojtabaei, Seyed Mohammad; Yilmaz, Fatih; Becque, Jurgen; Hajirasouliha, Iman
14:45-15:00	Structural response of hybrid timber - cold formed steel floors	Dan Bompa	Bompa, Dan V.; Dance, George; Chira, Alexandru; Walker, Martin G. ; Nagy, Zsolt
15:00-15:15	Closed built-up cold-formed steel columns under compression	Helder Craveiro	Craveiro, Hélder D.; Rahnavard, Rohola; Santiago, Aldina; Laím, Luís; Simões, Rui
15:15-15:30			

PARALLEL SESSION 4 (PS-4) - Day 2 - 14:00-15:30

PS-4g | High-strength, Stainless and other Special Steels | Room 7 | Day 2 - 14:00-15:30

Chairpersons: Fangxin Hu, Markus Feldmann

Time	Title	Speaker	Authors
14:00-14:15	Monotonic and cyclic response of mild, stainless, and high-strength steels, and their welded connections	Anna Ene	Ene, Anna; Stratan, Aurel; Both, Ioan; Abrudan, Ovidiu
14:15-14:30	Load-carrying capacity of MAG butt and fillet welded joints on high-strength structural steels of grade S960QL and S960MC	Oliver Brätz	Brätz, Oliver; von Arnim, Mareike; Eichler, Stefan; Gericke, Andreas; Henkel, Knuth-Michael; Hildebrand, Jörg; Bergmann, Jean Pierre; Kuhlmann, Ulrike
14:30-14:45	Influence of the Plate Thickness on Fracture and Impact Toughness of Duplex Stainless Steels	Georjina Jabour	Afzali, Nariman; Jabour, Georjina Jabour; Stranghöner, Natalie; Langenberg, Peter
14:45-15:00	Design of stainless steel cross-sections by inelastic stability analysis	Jurgen Becque	Becque, Jurgen; Gilbert, Saul
15:00-15:15	Structural behavior of single-sided welded HSS-T-joints with softening in the heat-affected zone	Brian Rust	Rust, Brian; Kästner, Thoralf; Stroetmann, Richard
15:15-15:30	A Lode angle modified void growth model for ductile fracture initiation of steels	Jingsheng Zhou	Liu, Xiaofan; Yan, Shen; Rasmussen, Kim J. R.; Deierlein, Gregory G.

PS-4h | Fire Resistance and Structural Robustness | Room 8 | Day 2 - 14:00-15:30

Chairpersons: Florea Dinu, Paulo Vila-Real

Time	Title	Speaker	Authors
14:00-14:15	Mechanical properties of S355 butt welds at elevated temperatures	Aldina Santiago	Santiago, Aldina; Crescenzo, Pasquale Nacchia; Craveiro, Helder; Latour, Massimo; Rodrigues, Dulce; Leitão, Carlos
14:15-14:30	Numerical Assessment of The Robustness of a Corner-supported Modular Steel Building	Si Hwa Heng	Heng, Si Hwa; Hyland, David; Hough, Michael; McCrum, Daniel
14:30-14:45	Fire exposure measurements using plate thermometers	Michał Malendowski	Malendowski, Michał; Szymkuć, Wojciech; Daszkiewicz, Tomasz; Turkowski, Piotr; Węgrzyński, Wojciech
14:45-15:00	Experimental Study on Fire Performance of Polymer Foam Cavity Insulated Light Steel Framed Walls	Davor Skejić	Ščapec, Tomislav; Skejić, Davor; Jelčić Rukavina, Marija
15:00-15:15	Fire-Induced Collapse of Automated Rack-Supported Warehouses	Alessandro Mei	Mei, Alessandro; Orlando, Maurizio; Salvatori, Luca; Thiele, Klaus
15:15-15:30	Optimized fire design for steel industrial sheds	Filip Ljubinkovic	Ljubinkovic, Filip; Laím, Luís; Martins, João; Santiago, Aldina; Simões da Silva, Luís; Cândido, Nuno; Cordeiro, Luís

PS-4i | Seismic Resistance, Dynamics and Vibration | Room 9 | Day 2 - 14:00-15:30

Chairpersons: Lucia Tirca, Aurel Stratan

Time	Title	Speaker	Authors
14:00-14:15	Statistical evaluation of the influence of manufacturing tolerances on the flexural cyclic behavior of I-shaped hot rolled steel beams	Cyrus Eshaghi	Eshaghi, Cyrus; Mohabeddine, Anis; Carneiro De Barros, Rui; Romão, Xavier; Castro, José Miguel
14:15-14:30	Compressive Behaviors of Steel Braces with Different Sectional Shapes	Dong-Hyeon Shin	Shin, Dong-Hyeon; Kim, Hyung-Joon
14:30-14:45	Seismic Performance Evaluation of Moment Resistance Connection by Load Velocity	Younghun Seol	Seol, Younghun; Lee, Kiwon; Park, Jaehan; Oh, Sanghoon
14:45-15:00	Experimental qualification of replaceable bolted links in dual eccentrically braced frames	Dan Dubina	Dubina, Dan; Stratan, Aurel
15:00-15:15	Experimental study on open core hybrid buckling restrained braces with different debonding layer geometries	Partha Sajal Kanti Deb	Das, Pallab Jyoti; Deb, Sajal Kanti
15:15-15:30	Optimisation of the damping properties of steel structures using adhesively bonded joints	Jannis Damm	Damm, Jannis; Albiez, Matthias; Ummenhofer, Thomas

PARALLEL SESSION 4 (PS-4) - Day 2 - 14:00-15:30

PS-4j | Welded Joints and Connections | Room 10 | Day 2 - 14:00-15:30

Chairpersons: Fiona Walport, Jeffrey Packer

Time	Title	Speaker	Authors
14:00-14:15	Cyclic behaviour of 3D cut welded connections with CHS columns and through I-beams	Sabatino Di Benedetto	Di Benedetto, Sabatino; Latour, Massimo; Francavilla, Antonella Bianca; Rizzano, Gianvittorio
14:15-14:30	Study of the behaviour of S355 welded joints with CHS columns and through beams	Gabriele Zanon	Safaeifaeigh, Shervin; Zanon, Gabriele; Bursi, Oreste S.
14:30-14:45	Experiments on Welded High Strength Steel S700 K-joints	Omar Alshawwa	Alshawwa, Omar; Mela, Kristo; Ahola, Antti; Björk, Timo
14:45-15:00	Simulation of Welding Residual Stresses in Large Structures – First Results of Thermal Analyses	Stefanos Gkatzogiannis	Gkatzogiannis, Stefanos; Gantes, Charis
15:00-15:15	Heat management and tensile strength of 3 mm mixed and matched connections of butt joints of S355J2+N, S460MC and S700MC	Stefan Eichler	Eichler, Stefan; von Arnim, Mareike; Brätz, Oliver; Hildebrand, Jörg; Gericke, Andreas; Bergmann, Jean Pierre; Kuhlmann, Ulrike; Henkel, Knuth-Michael
15:15-15:30	Experimental and Numerical Programs on Laser-Cut I-Beam-to-CHS/SHS-Column Joint Components	Damian Händeler	Händeler, Damian; Don, Rafaela; Vulcu, Cristian; Hoffmeister, Benno; Kanyilmaz, Alper

PARALLEL SESSION 5 (PS-5) - Day 2 - 16:00-17:30

PS-5a | Bolted Connections | Red Hall | Day 2 - 16:00-17:30

Chairpersons: Aurel Stratan, František Wald

Time	Title	Speaker	Authors
16:00-16:15	Bearing failure analysis in the design of bolted connections with austenitic stainless steel	José Henriques	de P. Sobrinho, Kelvin; da Silva, André T.; Rodrigues, Monique C.; Henriques, José A.; Lima, Luciano R.
16:15-16:30	A new generalised component method for predicting the full range behaviour of bolted bearing type joints	Jingsheng Zhou	Zhou, Jingsheng; Yan, Shen; Zhang, Hao; Rasmussen, Kim J.R.; Deierlein, Gregory G.
16:30-16:45	Experimental and Numerical Study on Shear Behaviour of Bolted Inter-Modular Connection	Rajanayagam Heshachanaa	Rajanayagam, Heshachanaa; Gunawardena, Tharaka; Mendis, Priyan; Poologanathan, Keerthan; Perampalam, Gatheeshgar; Nagaratnam, Brabha; Corradi, Marco
16:45-17:00	Experimental investigation of influence parameters on cartridge fired pin resistance	Nina Gluhović	Gluhović, Nina; Dobrić, Jelena; Spremić, Milan; Marković, Zlatko
17:00-17:15	Durable bolted joints for steel structures	Frank Götz	Götz, Frank
17:15-17:30	Ultimate behaviour of bolted beam-to-column connections in large rotations	Antonella Bianca Francavilla	Francavilla, Antonella B.; Latour, Massimo; Tan, P.J.; Rizzano, Gianvittorio

PS-5b | Steel Composite Structures | Blue Hall | Day 2 - 16:00-17:30

Chairpersons: Jean-François Demonceau, Marko Pavlovic

Time	Title	Speaker	Authors
16:00-16:15	Flexural resistance of Cold-formed steel-lightweight concrete (CFS-LWC) composite beam	Rohola Rahnavard	Rahnavard, Rohola; Craveiro, D. Hélder; Simões, Rui
16:15-16:30	Numerical investigations of the load-bearing and fatigue behavior of orthotropic composite slabs for road bridges	Camilla Lewerenz	Lewerenz, Camilla; Shirinzadeh, Mozdeh; Stroetmann, Richard
16:30-16:45	Metrics for the assessment of structural design efficiency applied to steel-framed industrial buildings	Filip Ljubinkovic	Ljubinkovic, Filip; Conde Conde, Jorge; Gervasio, Helena; Simões da Silva, Luís
16:45-17:00	Recycled CFRP Plate Retrofitting using Adhesive and TRS for Steel Girders	Masahiro Sakano	Komon, Kazuki; Yamamura, Akihiko; Sakano, Masahiro
17:00-17:15	Calibration of ductile and shear damage models for carbon and stainless steel shear studs	Rebecca Presswood	Presswood, Rebecca; Shaheen, Mohamed; Afshan, Sheida
17:15-17:30	Shear transfer at the steel-concrete interface using different mechanical connectors	Hervé Degée	Bogdan, Teodora; Degée, Hervé; Dragan, Dan; Obiala, Renata

PS-5c | Fatigue and Fracture | Room 2 | Day 2 - 16:00-17:30

Chairpersons: Philippe van Bogaert, Johan Maljaars

Time	Title	Speaker	Authors
16:00-16:15	Fatigue tests on connections of hollow sections made of high-strength steel with shape-optimized gusset plates	Matthias Winkler	Winkler, Matthias; Dürr, André; Herion, Stefan; Ladendorf, Philipp
16:15-16:30	Influence of the geometry of butt welds and longitudinal attachments on their fatigue resistance	Gloria M.K. Hofmann	Hofmann, Gloria; Kuhlmann, Ulrike
16:30-16:45	Study of the effects of laser cutting processes on S235 structural steel	Gabriele Zanon	Shamlooei, Majid; Zanon, Gabriele; Brugnolli, Marco; Bursi, Oreste S.
16:45-17:00	Influence of loading frequency on ULFC life of structural steel under variable surface roughness	Aleena Saleem	Saleem, Aleena; Tamura, Hiroshi; Katsuchi, Hiroshi
17:00-17:15	Stress range in the welded cruciform joint in the shell model using the Hot Spot Stress Method	Kirill Golubiatnikov	Golubiatnikov, Kirill; Wald, František
17:15-17:30	Numerical Fatigue Strength curve for the C1 Wedge Connection	Mohabeddine Anis	Mohabeddine, Anis; Malschaert, David; Creusen, Koen; Winkes, Jasper; Veljkovic, Milan

PARALLEL SESSION 5 (PS-5) - Day 2 - 16:00-17:30

PS-5d | 3D Printing and Additive Manufacturing | Room 3 | Day 2 - 16:00-17:30

Chairpersons: Alper Kanyilmaz, Trayana Tankova

Time	Title	Speaker	Authors
16:00-16:15	Local buckling of WAAM stainless steel circular columns	Yanan Huang	Huang, Yanan; Yang, Lu; Liu, Meiyu; Xu, Kelong
16:15-16:30	Additive manufacturing of steel components by cold spraying	Farrokh Taherkhani / Alina Klemm	Klemm, Alina; Taherkhani, Farrokh; Gündel, Max
16:30-16:45	Experimental local stability of 3D-printed stub columns stiffened by sinusoidal waves	Ben Chater	Chater, Ben; Wang, Jie; Evernden, Mark; Pan, Jingbang
16:45-17:00	Structural performance of additive manufactured aluminium tubular stub columns	Junaid Abdullah J. Bawazeer	Bock, Marina; Bawazeer, Junaid; Robinson, John; Theofanous, Marios; Skalomenos, Konstantinos
17:00-17:15	Internal stiffening of steel hollow sections by additive manufacturing and topology optimisation	Hoang Long Cao	Cao, Hoang Long; Davison, Buick; Hajirasouliha, Iman
17:15-17:30			

PS-5e | Bridge Construction and Structural Design | Room 5 | Day 2 - 16:00-17:30

Chairpersons: Sheida Afshan, Bernhard Hauke

Time	Title	Speaker	Authors
16:00-16:15	Renovating the Van Brienenoord Bridge: Steelwork in mechanical system of bascule bridge spanning 50m	Bert Hesselink	Janssens, Tom; Hesselink, Bert; Montijn, Jacques; de Kluijver, Erik; Mooijweer, Rik; Brands, Mack; van der Graaf, Patrick
16:15-16:30	Lateral trusses between I-girders introducing torsional stiffness to a composite bridge in Guatemala	Victor Vestman	Vestman, Victor; Jordán García, F. Javier; Santamaría Caballero, Guillermo; Collin, Peter
16:30-16:45	Influence of eccentric load introduction during launching with rockers using an elastomeric bearing	Nadine Thomas	Thomas, Nadine; Mensinger, Martin; Ndogmo, Joseph
16:45-17:00	The effect of temperature actions on single-sided fillet welds in small-sized box girders of bridges	Malik Ltaief	Ltaief, Malik; Mensinger, Martin
17:00-17:15	Efficient Design of an Office building as Steel/Timber hybrid – A case study	Omer Anwaar	Anwaar, Omer; Bello-Garcia, Micael; Matias de Paula Filho, José Humberto
17:15-17:30	Probabilistic design life selection procedure for a steel bridge	Egor Svechnikov	Svechnikov, Egor; Snijder, Bert; Maljaars, Johan; de Boon, Johan; Drenth, Eize

PS-5f | Cold-Formed Structures | Room 6 | Day 2 - 16:00-17:30

Chairpersons: Dan Dubina, László Dunai

Time	Title	Speaker	Authors
16:00-16:15	Effect of Intermediate Stiffeners in an Optimization of Axially Compressed Built-up Thin-Walled Column Cross-Sections According to the Eurocode 3	Mantas Stulpinas	Stulpinas, Mantas; Daniūnas, Alfonsas
16:15-16:30	Assessment of Eurocode 3 shear design provision for cold-formed steel beams with web holes	Gatheeshgar Perampalam	Perampalam, Gatheeshgar; Bock, Marina; Chandrasiri, Dilanka; Suntharalingam, Thadshajini
16:30-16:45	Flexural behaviour of CFS stacked built-up beams: experiments, finite element modelling and direct strength method	Hooman Rezaeian	Rezaeian, Hooman; Andarini, Rhonita
16:45-17:00	Proposal for the approach of torsional restraint by sandwich panels under uplifting loads	Tim Krieglstein	Krieglstein, Tim; Kühn, Bertram; Naujoks, Bernd
17:00-17:15	Experimental campaign on components of steel frames for elevators	Marco Simoncelli	Baldassino, Nadia; Bernuzzi, Claudio; Simoncelli, Marco
17:15-17:30			

PARALLEL SESSION 5 (PS-5) - Day 2 - 16:00-17:30

PS-5g | High-strength, Stainless and other Special Steels | Room 7 | Day 2 - 16:00-17:30

Chairpersons: Dominik Jungbluth, Richard Stroetmann

Time	Title	Speaker	Authors
16:00-16:15	Web crippling behaviour of cold-formed high-strength steel unlipped channel beams	Elilarasi Kanthasamy	Kanthasamy, Elilarasi; Alsanat, Husam; Poologanathan, Keerthan; Perampalam, Gatheeshgar; Shanmuganathan, Gunalan; Nagaratnam, Brabha; Corradi, Marco
16:15-16:30	Design of aluminium Sigma sections for web crippling behaviour under Interior Two Flange (ITF) load case	Thirunavukkarasu Kajaharan	Thirunavukkarasu, Kajaharan; Alsanat, Husam; Poologanathan, Keerthan; Shanmuganathan, Gunalan; Perampalam, Gatheeshgar; Kanthasamy, Elilarasi; Higgins, Craig
16:30-16:45	Effect of heat treatment on microstructure and pseudoelasticity of a memory-steel	Maryam Mohri	Mohri, Maryam; Leinenbach, Christian; Lignos, Dimitrios G.; Ghafoori, Elyas
16:45-17:00	Research on high-performance steel structure with high-strength steel column, ordinary-strength steel beam, and low-yield-point steel BRB	Gang Shi	Shi, Gang; Zhao, Huatian; Gao, Yang
17:00-17:15	Seismic Behaviour of High-Strength Steel Welded Flange-Bolted Web Connections	Fangxin Hu	Hu, Fangxin; Wang, Zhan
17:15-17:30			

PS-5h | Fire Resistance and Structural Robustness | Room 8 | Day 2 - 16:00-17:30

Chairpersons: Katherine Cashell, Paulo Vila-Real

Time	Title	Speaker	Authors
16:00-16:15	Burnout resistance of concrete-filled steel tubular (CFST) columns under realistic fire conditions	Wojciech Szymkuc	Szymkuc, Wojciech; Malendowski, Michał; Glema, Adam
16:15-16:30	Ductile fracture simulation on 10.9 HP bolts under composite loading at elevated temperatures	Jie Li	Li, Jie; Xin, Haohui; Veljkovic, Milan
16:30-16:45	Finite element study on the behaviour of free from damage connections under fire	Ana Francisca Henriques Parente dos Santos	Santos, Ana Francisca; Santiago, Aldina; Craveiro, Helder; Simões da Silva, Luís
16:45-17:00	The influence of the steel beam-concrete slab interaction on the robustness capacity of steel frames	Dominic Jakab	Jakab, Dominic; Dinu, Floarea; Neagu, Calin; Dubina, Dan
17:00-17:15	Resistance and behaviour of carbon steel and stain- less steel columns with axial and rotational end-restraints in fire	Merih Kucukler	Quan, Chunyan; Murtaza, Hasan; Kucukler, Merih
17:15-17:30	Progressive collapse analysis of steel frames via a nonlinear SDOF model	Christoforos Dimopoulos	Dimopoulos, Christoforos

PS-5i | Seismic Resistance, Dynamics and Vibration | Room 9 | Day 2 - 16:00-17:30

Chairpersons: Mario D'Aniello, Xin Meng

Time	Title	Speaker	Authors
16:00-16:15	In-plane quasi-static tests for the evaluation of seismic demand of power actuated fasteners (PAF)	Luigi Fiorino	Fiorino, Luigi; Campiche, Alessia; Grzesik, Peter; Landolfo, Raffaele
16:15-16:30	Influence of reinforced concrete slab on the cyclic response of bolted shear links	Adriana Chesoan	Chesoan, Adriana; Stratan, Aurel; Ciutina, Adrian
16:30-16:45	Simplified Nonlinear Dynamic Analysis by Hexagonal Collapse Surface Model of Steel Frame Structure	Viliana Jainih	Jainih, Viliana; Choi, Jae Hyouk
16:45-17:00	Development of pinching-free tension-only CBFs based on the application of metal foam dampers	Massimo Latour	Sato, Atsushi; Latour, Massimo; Rizzano, Gianvittorio
17:00-17:15	Assessment of steel-concrete composite floors dynamic response when subjected to people walking	José Guilherme Santos da Silva	Viana Aguiar, Jefferson; Elisa Ferreira, Bárbara; Carvalho, Hermes; Santos da Silva, José Guilherme
17:15-17:30	Experimental study on earthquake-induced pounding between steel structures	Robert Jankowski	Softysik, Barbara; Jankowski, Robert

PARALLEL SESSION 5 (PS-5) - Day 2 - 16:00-17:30

PS-5j | Reuse and Retrofitting of Structural Element | Room 10 | Day 2 - 16:00-17:30

Chairpersons: René Oly, Milan Veljkovic

Time	Title	Speaker	Authors
16:00-16:15	The pavilion "Petite Maison" of the European Cultural Capital Esch'22: A case study of circular economy benefits in steel construction	Shahin Sayyareh	Sayyareh, Shahin; Ummenhofer, Thomas; Odenbreit, Christoph
16:15-16:30	Structural Performance of Demountable Hybrid Floor Systems Under Monotonic and Cyclic Loading	Florentia Kavoura	Kavoura, Florentia; Zhang, Yufei; Veljkovic, Milan
16:30-16:45	Fatigue strengthening of cracked steel plates with bonded Fe-SMA strips	Lingzhen Li	Li, Lingzhen; Wang, Sizhe; Chen, Tao; Chatzi, Eleni; Heydarinouri, Hossein; Ghafoori, Elyas
16:45-17:00	Shape Memory Alloy-Based Seismic Retrofit of an Existing URM Building	Maria Ntina	Ntina, Maria I.; Efthymiou, Evangelos
17:00-17:15	Dynamic Increase Factors for progressive collapse analysis of steel structures accounting for column buckling	Luca Possidente	Possidente, Luca; Freddi, Fabio; Tondini, Nicola
17:15-17:30			

EUROSTEEL 2023 - DAY 3

Keynote lectures | Red Hall | Day 3 - 9:00-10:00

Chairpersons: Aldina Maria da Cruz Santiago, Leroy Gardner

Time	Title	Speaker
09:00-09:30	Keynote lecture Prequalified seismic-resistant steel moment connections in the U.S.	Michael D. Engelhardt
09:30-10:00	Keynote lecture High performance metallic materials and structures for applications in infrastructure and energy sectors	Sheida Afshan

PARALLEL SESSION 6 (PS-6) - Day 3 - 10:30-12:30

PS-6a | Steel Composite Structures | Red Hall | Day 3 - 10:30-12:30

Chairpersons: Renata Obiala, Jean-François Démonceau

Time	Title	Speaker	Authors
10:30-10:45	Influence of Temperature on the Behavior of Sandwich Panels	Sonja Steineck	Steineck, Sonja; Lange, Jörg
10:45-11:00	Investigating the impact of thermal stresses on blistering effects in sandwich panels	Annalena Kühn	Kühn, Annalena; Haugwitz, Christoph; Hinrichs, Jan; Kupnik, Mario; Lange, Jörg
11:00-11:15	Demountable shear connectors – constructional details and push-out tests	Krisztián Király	Király, Krisztián; Dunai, László; Calado, Luis; Kocsis, András Balázs
11:15-11:30	Study on headed shear studs influencing the interfacial bond behaviour in CFST columns	Partha Debnath	Debnath, Partha Pratim; Chen, Junbo; Varma, Amit H.; Chan, Tak-Ming
11:30-11:45	Behaviour of demountable steel-concrete composite beams with bolts and headed studs	Isidora Jakovljević	Jakovljević, Isidora; Spremić, Milan; Fric, Nenad; Marković, Zlatko
11:45-12:00	Structural performance evaluation of thin-walled concrete filled steel tube column to reinforced concrete wide beam connection	Jinwon Kim	Kim, Jinwon; Lee, Kyungkoo; Kim, Daehee
12:00-12:15	Numerical studies on the torsional behavior of octagonal concrete-filled linked double steel tubes	Mashudha Sulthana	Sulthana, Mashudha
12:15-12:30	Robustness of Sandwich Panels Subjected to Blast Wave	Robert Studziński	Studziński, Robert; Malendowski, Michał; Sumelka, Wojciech; Gajewski, Tomasz; Peksa, Piotr; Sielicki, Piotr

PS-6b | Steel Composite Structures | Blue Hall | Day 3 - 10:30-12:30

Chairpersons: Stefanos Gkatzogiannis, Zlatko Markovic

Time	Title	Speaker	Authors
10:30-10:45	Structural behavior of sigma-type thin-walled cold-formed steel beams reinforced with CFRP textile	Katarzyna Rzeszut	Rzeszut, Katarzyna; Dybizbański, Maciej
10:45-11:00	Experimental study of the cyclic behavior of steel tube in concrete-filled steel tube members	Shiye Wang	Wang, Shiye; Wang, Wei; Lignos, Dimitrios
11:00-11:15	Experimental investigations on composite stub columns: hollow sections with embedded solid core made of HSS	Till Janiak	Janiak, Till; Nonn, Jonas; Wolters, Kevin; Classen, Martin
11:15-11:30	Calibrated Design of High Strength Composite Columns	Šarūnas Kelpša	Kelpša, Šarūnas; Beckmann, Oliver; Guobys, Raimondas; Schurgacz, Przemysław; Augonis, Mindaugas
11:30-11:45	Numerical investigation of lateral behaviour of steel-timber hybrid frames	Dan Bompa	Offerman, Tom; Bompa, Dan V.
11:45-12:00	Axial behaviour of steel tubes infilled with rubberised alkali-activated concrete	Ahmed Elghazouli	Elzeadani, Mohamed; Bompa, Dan; Elghazouli, Ahmed
12:00-12:15	Determination of overall factor for the application of the General Method based on plastic and strain-limited N-M interaction for composite compression members	Pellumb Zogu	Zogu, Pellumb; Schäfer, Markus
12:15-12:30			

PARALLEL SESSION 6 (PS-6) - Day 3 - 10:30-12:30

PS-6c | Bolted Connections | Room 1 | Day 3 - 10:30-12:30

Chairperson: Chairpersons: Mario D'Aniello, Aleksander Kozłowski

Time	Title	Speaker	Authors
10:30-10:45	Full-Scale Steel Moment-Resisting Frame with Dissipative Bolted Connections under Monotonic Loads: Experimental versus Numerical Results	Georgios Balaskas	Balaskas, Georgios; Don, Rafaela; Vulcu, Cristian; Hoffmeister, Benno
10:45-11:00	Preliminary study of axial-moment interaction diagrams for semi-rigid end plate bolted connections	Javier Gracia Rodríguez	Gracia, Javier; Gil, Beatriz; Bayo, Eduardo
11:00-11:15	Effect of Curling Phenomenon on Block Shear and Tear-out Strengths of Bolted Connections	Cao Hung Pham	Pham, Viet Binh; Pham, Cao Hung; Hancock, Gregory J.
11:15-11:30	Large beam-to-column steel joint for the DUNE Neutrino Experiment: experimental and numerical insights	Jorge Conde	Simões da Silva, Luís; Craveiro, Hélder; Simões, Rui; Martins, Claudio; Conde, Jorge
11:30-11:45	Strength Evaluation of Pipe-Rack Connection Using Extended End Plate	Seonghun Kang	Kang, Seong-Hun; Woo, Jong-Hun; Shin, Kyung-Jae; Lee, Woo-Geun; Park, Hwa-In
11:45-12:00	Load-deformation behavior of injection bolts for maintenance of steel structures under dynamic loads	Lisa Kröger	Ungermann, Dieter; Kröger, Lisa
12:00-12:15	Development of a preloadable, temperature-stable, geopolymer-based gap compensation material	Hendrik Morgenstern	Morgenstern, Hendrik; Kunde, Carsten; Raupach, Michael
12:15-12:30	Column web component under out-of-plane loading: experimental and numerical studies	Melaku Seyoum Lemma	Lemma, Melaku; Simões da Silva, Luís; Conde, Jorge Conde; Rebelo, Carlos

PS-6d | Fatigue and Fracture | Room 2 | Day 3 - 10:30-12:30

Chairpersons: Balázs Kövesdi, Bertram Kühn

Time	Title	Speaker	Authors
10:30-10:45	Proposal for the suitable choice of material to avoid brittle fracture on Jacket foundations	Philipp Krah	Krah, Philipp; Kühn, Bertram
10:45-11:00	Investigations on the fatigue behaviour of welded cover plates with extended weld seams	Jakob Roth	Roth, Jakob; Dürr, André; Mensinger, Martin; Rausch, Niclas
11:00-11:15	Fatigue Life Prediction of S235 Details Based on Dislocation Density	Bruno Alexandre Silva Pedrosa	Pedrosa, Bruno; Correia, José; Gripp, Iara; Fernandes, Lisete; Rebelo, Carlos
11:15-11:30	Fatigue verification of orthotropic bridge decks with the hot-spot method – Background to TS 1993-1-901	Johan Maljaars	Maljaars, Johan; Pijpers, Richard; Veljkovic, Milan; Van Dooren, Frank
11:30-11:45	A triaxiality-dependent fracture model for hot-rolled sections made of S355 steel	Pelagia Kastiza	Kastiza, Pelagia; Skalomenos, Konstantinos; Theofanous, Marios
11:45-12:00	Fatigue resistance of austenitic stainless steel bolts under tension	Lukas Ehrhardt	Stranghöner, Natalie; Ehrhardt, Lukas
12:00-12:15			
12:15-12:30			

PS-6e | 3D Printing and Additive Manufacturing | Room 3 | Day 3 - 10:30-12:30

Chairpersons: Jelena Dobrić, Trayana Tankova

Time	Title	Speaker	Authors
10:30-10:45	Buckling tests on wire arc additively manufactured SHS columns	Cheng Huang	Huang, Cheng; Meng, Xin; Gardner, Leroy
10:45-11:00	Metal 3D-Printing for Repair of Steel Structures	Elyas Ghafoori	Ghafoori, Elyas; Dahaghin, Hamid; Diao, Chenglei; Pichler, Niels; Li, Lingzhen; Ding, Jialuo; Ganguly, Supriyo; Williams, Stewart
11:00-11:15	Effects of Deposition Rate on Local Stability of Wire Arc Additively Manufactured Outstand Elements	Sian Evans	Evans, Siân; Hadjipantelis, Nicolas; Wang, Jie
11:15-11:30	Experimental study on the local buckling response of WAAM stainless steel square hollow sections	Jie Wang	Evans, Siân; Xu, Fangda; Wang, Jie
11:30-11:45	3D-printing with steel on thin sheets for application in free form façade construction: welding process development and material properties	Philipp Grebner	Grebner, Philipp; Lange, Jörg
11:45-12:00	Robot supported Wire Arc Additive Manufacturing of Steel Columns	Benedikt Waldschmitt	Waldschmitt, Benedikt; Lange, Jörg
12:00-12:15			
12:15-12:30			

PARALLEL SESSION 6 (PS-6) - Day 3 - 10:30-12:30

PS-6f | ECCS TC8 Stability Session 1 | Room 5 | Day 3 - 10:30-12:30

Chairpersons: Markus Knobloch, Richard Stroetmann

Time	Title	Speaker	Authors
10:30-10:45	Lateral-Torsional Buckling of welded I-members with flame-cut flanges: Experimental and numerical studies	Maxime Lebastard	Lebastard, Maxime; Couchaux, Maël; Bureau, Alain; Hjjaj, Mohammed
10:45-11:00	Towards a stability verification of two-span members based on experimental and numerical investigations	Anna-Lena Bours	Bours, Anna-Lena; Winkler, Rebekka; Knobloch, Markus
11:00-11:15	Lateral torsional buckling of hot rolled channel sections – Numerical simulations and design proposal	André Beyer	Beyer, André; Khelil, Abdelouahab; Bureau, Alain; Boissonnade, Nicolas
11:15-11:30	Experimental investigation of steel frames made of hybrid steel welded I-sections	Xiang Yun	Yun, Xiang; Zhu, Yufei; Gardner, Leroy
11:30-11:45	Local buckling behaviour of high strength steel tubular beams under moment gradients	Zichang Yang	Yang, Zichang; Meng, Xin; Walport, Fiona; Gardner, Leroy
11:45-12:00	Out-of-plane flexural buckling design resistance of welded I-members made of flame-cut flanges	Maxime Lebastard	Lebastard, Maxime; Couchaux, Maël; Bureau, Alain; Hjjaj, Mohammed
12:00-12:15	GMNIA-based design of stainless steel structural systems	Fiona Walport	Walport, Fiona; Chan, Hou Un; Gardner, Leroy; Nethercot, David A.
12:15-12:30			

PS-6g | Masts and Towers, Offshore Structures | Room 6 | Day 3 - 10:30-12:30

Chairpersons: Markus Feldmann, Davor Skejić

Time	Title	Speaker	Authors
10:30-10:45	Imperfections in realistic metal wind turbine support towers: a one-at-a-time (OAAT) study	Lijithan Kathirkamanathan	Kathirkamanathan, Lijithan; Sadowski, Adam; Seidel, Marc
10:45-11:00	Performance-based wind engineering assessment of a telecommunication mast	Ágnes Kenéz	Kenéz, Ágnes; Joó, Attila László
11:00-11:15	Wrapped Composite Joints for Circular Hollow Section Structures	Marko Pavlovic	Pavlovic, Marko; Veljkovic, Milan; Segeren, Maxim
11:15-11:30	Design and weight optimisation of Offshore Topsides platforms using High Strength Steel	Miguel Candeias	Candeias, Miguel; Di Silvestro, Elena; Wain, Geraldine; Ville, Wishnu; Cecchini, Luca
11:30-11:45	New developments in heavy plates for offshore structures	Tobias Graf	Lehnert, Tobias; Graf, Tobias
11:45-12:00	Load carrying capacity of star-battened angle members made of S460 steel in compression	Marios-Zois Bezas	Bezas, Marios-Zois; Antonodimitraki, Sofia; Beyer, Andre; Anwaar, Muhammad-Omer; Maesschalck, Jan; Jaspert, Jean-Pierre; Demonceau, Jean-François
12:00-12:15	Strengthening of axially compressed bars in lattice towers under load – experimental investigations	Lucjan Ślęczka	Jastrzębski, Kamil; Ślęczka, Lucjan
12:15-12:30	Buckling resistance of angle bracing members with one-leg bolted end connections	Sofia Antonodimitraki	Antonodimitraki, Sofia; Bezas, Marios-Zois; Demonceau, Jean-François; Vayas, Ioannis; Maesschalck, Jan; Anwaar, Muhammad-Omer; Jaspert, Jean-Pierre

PS-6h | Eurocode and International Design Codes | Room 7 | Day 3 - 10:30-12:30

Chairpersons: Primož Može, Nadine Thomas

Time	Title	Speaker	Authors
10:30-10:45	Major-axis buckling of pin-ended stainless steel equal-leg angle section members: FE modelling and design	Behnam Behzadi-Sofiani	Behzadi-Sofiani, Behnam; Wadee, M. Ahmer; Gardner, Leroy
10:45-11:00	Measurement and statistical analysis of deviations in the cross-sectional geometry of hot-rolled I-sections	Robin Steinmetz	Steinmetz, Robin; Taras, Andreas
11:00-11:15	Interaction Formulae for N-My and N-Mz and their Accuracy in Hollow Sections	Christian Ludwig	Ludwig, Christian
11:15-11:30	Evaluation of Design Codes for Hot-Rolled Steel Angles in Concentric and Eccentric Compression	Luís Simões da Silva	Gomes Junyor, José; Carvalho, Hermes; Simões da Silva, Luís; Osvaldo Ferreira Filho, José; Lavall, Armando
11:30-11:45	Ductility classes in prEN 1998-1: Comparative analysis on concentrically braced frames	Bogdan Catalin Stefanescu	Ștefănescu, Bogdan Cătălin
11:45-12:00	Revision of the standard EN 1993-1-11 and background information	José Oliveira Pedro	Friedrich, Heinz; Misiek, Thomas; Pedro, José Oliveira; Ruff, Daniel C.
12:00-12:15	Improved Design Rules for Stainless and Carbon Steel Bolts Loaded in Tension and Shear	Christoph Abraham	Abraham, Christoph; Stranghøner, Natalie
12:15-12:30			

PARALLEL SESSION 6 (PS-6) - Day 3 - 10:30-12:30

PS-6i | Fire Resistance and Structural Robustness | Room 8 | Day 3 - 10:30-12:30

Chairpersons: Merih Kucukler, František Wald

Time	Title	Speaker	Authors
10:30-10:45	Stability behaviour of sinusoidal corrugated web girders under fire conditions	Dénes Kollár	Kollár, Dénes
10:45-11:00	Structural Behaviour of Steel-Fibre-Reinforced Composite Floor System for Modular Construction	Shan Li	Li, Shan; Gondokusumo, Gilbert; Liew, J. Y. Richard
11:00-11:15	Local buckling response and design of stainless steel hollow sections at elevated temperatures	Chunyan Quan	Quan, Chunyan; Kucukler, Merih
11:15-11:30	Structural response and design of stainless steel hollow section columns at elevated temperatures	Chunyan Quan	Quan, Chunyan; Kucukler, Merih
11:30-11:45	Robustness analysis for composite multi-storey modular buildings subjected to wind loads	Gaurav Swami	Swami, Gaurav; Thai, Huu-Tai; Liu, Xuemei
11:45-12:00	Localised Fire Assessment of a Steel Structural Solution in a Pilot Building	Antonio Gamba	Gamba, Antonio
12:00-12:15	On the Reliability of a Numerical Travelling Fire Model	Antonio Gamba	Gamba, Antonio
12:15-12:30	Preventing failure propagation in steel truss bridges	Nirvan Makoond	Sánchez Rodríguez, Ana; López, Santiago; Makoond, Nirvan; Buitrago, Manuel; Riveiro, Belén; Adam, Jose M.

PS-6j | Seismic Resistance, Dynamics and Vibration | Room 9 | Day 3 - 10:30-12:30

Chairpersons: Vincenzo Piluso, Gianvittorio Rizzano

Time	Title	Speaker	Authors
10:30-10:45	Comparative study regarding the seismic design of diagonal concentrically braced frames	Helmuth Köber	Köber, Helmuth; Marcu, Ramona; Stoian, Marina
10:45-11:00	The influence of hinged and rigid connections on the seismic behaviour of "Inverted Y" bracing systems	Helmuth Köber	Köber, Helmuth; Stoian, Marina; Marcu, Ramona
11:00-11:15	Seismic Behaviour of High-Strength Steel Bolted Extended End-Plate Connections	Fangxin Hu	Hu, Fangxin; Wang, Zhan
11:15-11:30	Performance of short links with flush and extended end plate connections using FEM analysis	Francesco Plaitano	Plaitano, Francesco; Stratan, Aurel; Chesoa, Adriana; Nastri, Elide
11:30-11:45	Wind hazard on earthquake damaged buildings	Lucia Tirca	Athanasios, Anastasia; Dakour, Mohamad; Tirca, Lucia; Stathopoulos, Ted
11:45-12:00	Cyclic Behavior of Single and Double-angle Bracing Members Employed in Pipeline Supporting Structures	Go Hyun	Go, Hyun; Kim, Hyung-Joon
12:00-12:15	Numerical assessment of the cyclic behaviour of structural steel members subjected to biaxial bending	Elisa Cerqueira	Cerqueira, Elisa; Eshaghi, Cyrus; Peres, Rita; Castro, José Miguel
12:15-12:30	Experimental Investigation of Seismic Vulnerability of Braces under Hazard Consistent loading sequences	Dipti Ranjan Sahoo	Patra, Pratik; Sahoo, Dipti; Jain, Arvind

PS-6k | Reuse and Retrofitting of Structural Element | Room 10 | Day 3 - 10:30-12:30

Chairpersons: Nauzika Kovács, Christoph Odenbreit

Time	Title	Speaker	Authors
10:30-10:45	Out of the box strengthening design of steel box girder for an existing tied-arch bridge	Felix de Meijer	de Meijer, Felix; Tjepkema, Daan; van Es, Sjoers; van Dooren, Frank
10:45-11:00	Potentials of reusing steel skeleton structures from multistorey parking units for architectural applications	Hilke Manot	Manot, Hilke; Lienhard, Julian
11:00-11:15	Design for disassembling, reuse, and the circular economy: a demonstration building, "Petite Maison"	Jie Yang	Odenbreit, Christoph; Yang, Jie; Kozma, András; Romero, Alfredo; Popa, Nicoleta; Hanus, François; Obiala, Renata
11:15-11:30	Innovative orthotropic deck strengthening design for the Suurhoff lifting bridge	Fruzsina Csillag	Rikken, Maarten; Csillag, Fruzsina; Sonneveld, Michelle; Gratton, David; Gibson, Rupert; Montalbini, Gianmarco
11:30-11:45	Experimental Testing of Post-installed Anchors for Use in Retrofitting of RCC Frame with Steel Braces	Devyani Tewatia	Tewatia, Devyani; Kumar, P.C. Ashwin
11:45-12:00	Design and Numerical Simulation of a Reusable Steel Column Base Connection with Pinned Energy Dissipators	Qi Ma	Ma, Qi; Chan, Tak-Ming
12:00-12:15			
12:15-12:30			

PARALLEL SESSION 7 (PS-7) - Day 3 - 14:00-16:00

PS-7a | Steel Composite Structures | Red Hall | Day 3 - 14:00-16:00

Chairpersons: Teodora Bogdan, Benno Hoffmeister

Time	Title	Speaker	Authors
14:00-14:15	Investigation of Wood-Steel Composite Shear Walls Behavioural Parameters	Tzanetis Vogiatzis	Vogiatzis, Tzanetis; Efthymiou, Evangelos; Tsalkatidis, Themistoklis
14:15-14:30	Shear Capacity of Channel Shear Connectors Applied in Composite Slabs with Profiled Steel Decking	Luis Augusto Pupin / Cardoso Hermano	Cardoso, Hermano; Pupin, Luis Augusto
14:30-14:45	Size effects on the structural behaviour of wrapped composite CHS joints	Jincheng Yang	Yang, Jincheng; Koetsier, Mathieu; Peeters, Tjeu; Wolters, Mees; Pavlovic, Marko
14:45-15:00	A review on long-term behaviour of steel-concrete composite structures	Youtian Wang	Wang, Youtian; Khan, Mahbub; Li, Dongxu; Uy, Brian; Thai, Huu-Tai; Ngo, Tuan
15:00-15:15	Review and outlook about the use of high strength steel in encased composite columns	Renata Obiala	Obiala, Renata; Anwaar, Omer; Yang, Jie; Zanon, Riccardo
15:15-15:30	Effect of salt water ageing on the degradation of steel-composite bonded interfaces	Marcio Moreira Arouche	Moreira Arouche, Marcio; Feng, Weikang; Karatsi, Paraskevi; Kapteijn, Tim; Pavlovic, Marko
15:30-15:45			
15:45-16:00			

PS-7b | Steel Composite Structures | Blue Hall | Day 3 - 14:00-16:00

Chairpersons: Hervé Degée, Martin Vild

Time	Title	Speaker	Authors
14:00-14:15	Investigations on the stability behaviour of axially loaded sandwich panels with integrated longitudinal profiles	Kevin Janczyk	Janczyk, Kevin; Kuhnhenne, Markus
14:15-14:30	New fire resistance design approach for concrete-filled cold-formed steel (CF-CFS) built-up composite column	Rohola Rahnavard	Rahnavard, Rohola; Craveiro, D. Hélder; Simões, Rui
14:30-14:45	Parametric study for Y-shape perfobond shear connection	Nauzika Kovács	Mefleh, Wajdi; Kovács, Nauzika
14:45-15:00	Comparative study of different steel-concrete composite shear walls	Omer Anwaar	Anwaar, Omer; Pepe, Davide; Zanon, Riccardo
15:00-15:15	Characterizing the transition zone between steel-concrete composite and reinforced concrete members	Dan Dragan	Dragan, Dan; Das, Rajarshi; Degée, Hervé
15:15-15:30	Finite Element Analyses of Demountable Shear Connection in Cold-Formed Steel-Concrete Composite Beam Based on Experimental Data	Vlaho Žuvelek	Žuvelek, Vlaho; Ćurković, Ivan; Lukačević, Ivan; Rajić, Andrea
15:30-15:45	A comparative study on steel-concrete composite columns for use in RC Tall Buildings in Seismic Areas	Hazal Mert	Mert, Hazal; Celik, Oguz C.
15:45-16:00			

PS-7c | Design for Fast Execution and Disassembling | Room 1 | Day 3 - 14:00-16:00

Chairpersons: Helena Gervasio, Florentia Kavoura

Time	Title	Speaker	Authors
14:00-14:15	Buckling Check of Structures Being Lifted	Rafael Scudeleri de Macedo / Luiz Francisco Scudeleri de Macedo	Scudeleri de Macedo, Luiz Francisco; Scudeleri de Macedo, Rafael
14:15-14:30	Partially sleeved joints between hollow sections using self-drilling screws	Carlos López-Colina	López-Colina, Carlos; García, Ismael; Serrano, Miguel A.; Picallo, Diego G.; Vigón, Paula
14:30-14:45	I-Twin: Computational twin connectors for I-profiles. Towards unforeseen interoperability of digital tools	Hector Posada	Posada, Hector; Chacón, Rolando; Ramonell, Carlos
14:45-15:00	Experimental response of full-scale steel-aluminium foam-steel sandwich panels in bending	Massimo Latour	Sato, Atsushi; Latour, Massimo; D'Aniello, Mario; Rizzano, Gianvittorio; Landolfo, Raffaele
15:00-15:15	Swift-Constructed Demountable Blind Bolt for Fast Execution and Disassembling of SHS Connection	Xiao-Zhou Han	Han, Xiao-Zhou; Chan, Tak-Ming
15:15-15:30			
15:30-15:45			
15:45-16:00			

PARALLEL SESSION 7 (PS-7) - Day 3 - 14:00-16:00

PS-7d | Fatigue and Fracture | Room 2 | Day 3 - 14:00-16:00

Chairpersons: Haohui Xin, Harald Unterweger

Time	Title	Speaker	Authors
14:00-14:15	Different fatigue design stress methods for common constructional details in cylindrical shells under axial loading: Influence of the r/t-ratio and the shell thickness	Alexander Ecker	Ecker, Alexander; Unterweger, Harald
14:15-14:30	Hybrid fatigue crack propagation analysis using damage and fracture mechanics methods	Weijian Wu	Wu, Weijian; Rasmussen, Kim J.R.; Michel, Alexander; Stang, Henrik
14:30-14:45	Towards an advanced fatigue assessment of welded steel joints with multi-axial stress states	Simon Steinhoff	Steinhoff, Simon; Röscher, Stefanie; Knobloch, Markus
14:45-15:00	Multiaxial fatigue analysis of circumferentially butt-welded steel connection using fiber optic-based distributed strain sensing	Olena Karpenko	Karpenko, Olena; Koetsier, Mathieu; Pavlovic, Marko
15:00-15:15	Fatigue behavior of girder with flange thickness transitions and cope holes - tests and simulations	Stefanie Röscher	Röscher, Stefanie; Knobloch, Markus; Derler, Christoph; Langwieser, Martin; Unterweger, Harald
15:15-15:30	Simplified approaches for material characterization – an alternative for advanced fatigue design methods	Marion Rauch	Rauch, Marion
15:30-15:45	Comparison of seven ductile fracture initiation prediction models for stainless steel	Tamilselvan Nambirajan	Nambirajan, Tamilselvan; Ghosh, Diptarka; Kumar, P C Ashwin
15:45-16:00			

PS-7e | 3D Printing and Additive Manufacturing | Room 3 | Day 3 - 14:00-16:00

Chairpersons: Jörg Lange, Vlad Silvestru

Time	Title	Speaker	Authors
14:00-14:15	Proposal and experimental verification of additive manufactured beam-column connection designed by topological optimization	Beatriz Gil	Gil, Beatriz; Goñi, Rufino; Fábregas, María Isabel; Bayo, Eduardo
14:15-14:30	Optimisation and testing of simply-supported WAAM beams	Ben Weber	Weber, Ben; Meng, Xin; Nitawaki, Masashi; Gardner, Leroy
14:30-14:45	Experimental investigation on cyclic behaviour of wire arc additively manufactured carbon steel	Zhongxing Wang / Yuhang Hou	Wang, Zhongxing; Hou, Yuhang; Xu, Fangda
14:45-15:00	Buckling tests on I-section steel columns strengthened by additive manufacturing	Leroy Gardner	Gardner, Leroy; Li, Jin; Meng, Xin; Huang, Cheng; Kyvelou, Pinelopi
15:00-15:15	Testing and analysis of optimised wire arc additively manufactured steel trusses	Pinelopi Kyvelou	Kyvelou, Pinelopi; Spinasa, Athina; Gardner, Leroy
15:15-15:30	Rotating bending fatigue behaviour and quasi-static tensile properties of Wire Arc Additively Manufactured 308L stainless steel	Max de Munnik	Leonetti, Davide; de Munnik, Max; Kassing, Luuk; Khan, Danish; Moulin, Jean-Francois; Snijder, Bert
15:30-15:45			
15:45-16:00			

PS-7f | ECCS TC8 Stability Session 2 | Room 5 | Day 3 - 14:00-16:00

Chairpersons: Anna-Lena Bours, Bert Snijder

Time	Title	Speaker	Authors
14:00-14:15	Applications of 3D scanning and digital image correlation in structural experiments	Xin Meng	Meng, Xin; Pullen, Andy; Guo, Xi; Yun, Xiang; Gardner, Leroy
14:15-14:30	Strain-hardening dependent cross-sectional slenderness limits for the elastic resistance of steel beams	Patrick Studer	Studer, Patrick; Taras, Andreas
14:30-14:45	Equivalent global sway imperfections for use in design by GMNIA	Hou Un Chan	Chan, Hou Un; Walport, Fiona; Gardner, Leroy
14:45-15:00	Lateral-torsional buckling of beams made of monosymmetrical thin-walled sections	Maxime Vermeylen	Vermeylen, Maxime; Bezas, Marios-Zois; Crispin, Mathieu; Jaspard, Jean-Pierre; Demonceau, Jean-François
15:00-15:15	Novel formula for the elastic critical moment of beams with corrugated web	Gábor Hajdú	Hajdú, Gábor; Papp, Ferenc
15:15-15:30	The effect of prebuckling deflections on the lateral-torsional buckling of beams: numerical studies	Ghaith Atef Aref Abu Reden	Abu Reden, Ghaith A.; Adany, Sandor
15:30-15:45	Proposed residual stress model for hot-rolled wide flange steel cross sections	Andronikos Skiadopoulos	Skiadopoulos, Andronikos; de Castro e Sousa, Albano; Lignos, Dimitrios G.
15:45-16:00	Digital-Image-Correlation for Simulating Cyclic Local Buckling in Steel Beams	Selimcan Ozden	Ozden, Selimcan; de Castro e Sousa, Albano; Lignos, Dimitrios

PARALLEL SESSION 7 (PS-7) - Day 3 - 14:00-16:00

PS-7g | Masts and towers, Offshore Structures | Room 6 | Day 3 - 14:00-16:00

Chairpersons: Marios-Zois Bezas, Marko Pavlovic

Time	Title	Speaker	Authors
14:00-14:15	A Fourier-series numerical approach for the analysis of tubular members	Sandor Adany	Ádány, Sándor; Schafer, Benjamin W.
14:15-14:30	Buckling behavior of tubes subjected to combined bending and torsion	Sandor Adany	Ding, Victoria; Ádány, Sándor; Torabian, Shahab; Pervizaj, Anil; Schafer, Benjamin W.
14:30-14:45	Evaluation of Seismic Performance of Offshore Wind Turbine Foundations with Slip Joints by Large Shaking Table Tests	Yoko Soya	Soya, Yoko; Matsuki, Satoshi; Yamasawa, Tetsuya; Arai, Nanae; Fujii, Ayumi; Suzuki, Yoshitaka; Sako, Yuji
14:45-15:00	Finite Element Modelling of a Transmission Steel Lattice Tower Based on LiDAR Point Cloud Data	Filip Wrzosek	Wrzosek, Filip
15:00-15:15	Numerical modelling of the Self-Erecting Tower for onshore wind turbines	Mariela Mendez Morales	Gascon Merino, Pablo; Mendez Morales, Mariela; Rebelo, Carlos
15:15-15:30	Fatigue behaviour of hybrid grouted joints under axial loading	Jakob Boretzki	Boretzki, Jakob; Albiez, Matthias; Damm, Jannis; Ummenhofer, Thomas
15:30-15:45	Fatigue strength of tubular welded connections in offshore floating platforms	Theocharis Papatheocharis	Papatheocharis, Theocharis; Plakias, George T.; Zervaki, Anna D.; Karamanos, Spyros A.; Perdikaris, Philip C.
15:45-16:00	Digital Twin-Based Deterioration Prognosis of Steel Wind Turbine Towers in Modular Energy Islands	Junlin Heng	Heng, Junlin; Zhang, Jiaxin; Kaewunruen, Sakdirat; Dong, You; Charalamos, Baniotopoulos

PS-7h | Eurocode and International Design Codes | Room 7 | Day 3 - 14:00-16:00

Chairpersons: Markus Kettler, Vahid Pourastad

Time	Title	Speaker	Authors
14:00-14:15	Towards a practicable GMNIA procedure in the footsteps of the Direct Design Method	Lauri Jaamala	Jaamala, Lauri; Mela, Kristo
14:15-14:30	General method for I-section stainless steel beam-columns	Flávio Arrais	Arrais, Flávio; Jandera, Michal
14:30-14:45	Reassessment of Operating Engineering Steel Structures with the First Order Reliability Method and Bayesian Inference	Sharmistha Chowdhury	Chowdhury, Sharmistha; Arnold, Robert; Kraus, Matthias
14:45-15:00	Design assisted by finite element analysis – Introduction to the new prEN 1993-1-14 and Technical Report	László Dunai	Dunai, László; Kövesdi, Balázs; Gardner, Leroy; Al-Emrani, Mohammad; Casafont, Miquel; Degée, Hervé; Jandera, Michal; Kuhlmann, Ulrike; Taras, Andreas; Walport, Fiona
15:00-15:15	Second Generation of Eurocode 8: Seismic Design Rules for Cold-Formed Steel Buildings	Luigi Fiorino	Landolfo, Raffaele; Fiorino, Luigi
15:15-15:30	Cellular beams and prEN 1993-1-13: an opportunity to address environmental challenges	Antoine Glorieux	Glorieux, Antoine; Hanus, François
15:30-15:45	Moment Resisting Frames under the light of Japanese and European Codes	Maria Maglio	Maglio, Maria; Nastri, Elide; Piluso, Vincenzo; Sabatino, Simona; Sato, Atsushi
15:45-16:00			

PS-7i | Fire Resistance and Structural Robustness | Room 8 | Day 3 - 14:00-16:00

Chairpersons: Florea Dinu, Valentino Vigneri

Time	Title	Speaker	Authors
14:00-14:15	Compressive arch action in beams of steel frames subjected to a column loss	Tudor Golea	Golea, Tudor; Vermeylen, Maxime; Jaspert, Jean-Pierre; Demonceau, Jean-François
14:15-14:30	Numerical investigation of a steel tied arch bridge under fire loading	Patrick Covi	Covi, Patrick; Tondini, Nicola
14:30-14:45	Experimental investigations on the load-bearing behaviour of shear studs in trapezoidal sheet in fire	Kurt Tutzer	Tutzer, Kurt; Kaul, Mathias; Mensinger, Martin
14:45-15:00	Influence of load and high temperature on the post-fire behaviour of high-strength structural steels	Andrés Lapuebla-Ferri / David Pons	Lapuebla-Ferri, Andrés; Pons, David; Romero, Manuel L.; Gardner, Leroy
15:00-15:15	Experimental evaluation of the load-bearing capacity of steel-reinforced CFST stub columns under a fire scenario	Ana Espinós	Medall, David; Ibáñez, Carmen; Espinós, Ana; Romero, Manuel L.
15:15-15:30	Study on the fire performance of novel G550 galvanized steel-concrete composite slabs	Yun Cheng	Yun, Cheng; Yu, Xianglin; Yong-jiu, Shi
15:30-15:45			
15:45-16:00			

PARALLEL SESSION 7 (PS-7) - Day 3 - 14:00-16:00

PS-7j | Seismic Resistance, Dynamics and Vibration | Room 9 | Day 3 - 14:00-16:00

Chairpersons: Milan Spremić, Lucia Tirca

Time	Title	Speaker	Authors
14:00-14:15	Seismic behaviour of dissipative beam-to-column steel and steel-concrete composite joints	Georgios Skarmoutsos	Skarmoutsos, Georgios; Kuhlmann, Ulrike
14:15-14:30	Seismic performance of multistory chevron-braced steel structures with yielding beams	Ahmet Alperen Orgev	Orgev, Ahmet Alperen; Selamet, Serdar; Vatansever, Cuneit
14:30-14:45	Seismic Design of Non-Structural Components in Industrial Facilities – a Discussion of the EC8 Approach	Peter Knoedel	Knoedel, Peter
14:45-15:00	Theory of Plastic Mechanism Control for Linked Column Frames	Vincenzo Piluso	Montuori, Rosario; Nastri, Elide; Piluso, Vincenzo; Pisapia, Alessandro
15:00-15:15	Study on ultra-low cycle fatigue fracture of thick-walled steel bridge piers	Shuailing Li	Li, Shuailing; Zhuge, Hanqing; Xie, Xu
15:15-15:30	Measures to Improve Seismic Resistance by Fuse Mechanism in Pier Structures	Minoru Sekiguchi	Sekiguchi, Minoru; Taniguchi, Nozomu; Kobayashi, Kaoru
15:30-15:45	Cyclic pushout tests on high-performance concretefilled steel tube columns for seismic applications	Przemyslaw Schurgacz	Schurgacz, Przemyslaw; Winkler, Rebekka; Knobloch, Markus
15:45-16:00	Simplified method for the vibration comfort assessment of steel-concrete floors induced by crowd-rhythmic activities	Mladen Lukić	El Asri, Youssef; Denoël, Vincent; Couchaux, Maël; Hjiat, Mohammed; Lukić, Mladen

PS-7k | Reuse and Retrofitting of Structural Element | Room 10 | Day 3 - 14:00-16:00

Chairpersons: Angeliki Christoforidou, Elyas Ghafoori

Time	Title	Speaker	Authors
14:00-14:15	Truss bridge design with reclaimed steel elements by performing a stock-constrained shape and topology optimisation	Fé Lookeren Campagne	van Lookeren Campagne, Fé; Sonneveld, Michelle; van der Meer, Frans; Noteboom, Chris; Kavoura, Florentia
14:15-14:30	Prediction of prestress level in the steel structures strengthened by bonded Fe-SMA strips	Lingzhen Li	Li, Lingzhen; Wang, Sizhe; Chatzi, Eleni; Motavalli, Masoud; Ghafoori, Elyas
14:30-14:45	Research and outlook of steel beam-to-column joints retrofitted by welding haunches	Huatian Zhao	Zhao, Huatian; Shi, Gang
14:45-15:00	Modal analysis of a riveted lattice beam for improved retrofitting operations	Hannah Franz	Franz, Hannah; Chataigner, Sylvain; Dieng, Lamine; Rinke, Mario
15:00-15:15	Directly Reusable Steel Column Base Connection - Concept and Numerical investigation	Aswin Kumar Jeyabalan	Jeyabalan, Aswin Kumar; Selvaraj, Sivaganesh; Chan, Tak-Ming
15:15-15:30	Determination of actual material properties in existing structures using small specimens	Cécilia Braendstrup	van Es, Sjoers; Braendstrup, Cécilia; Slot, Henk; Seinen, Jeroen; Dekker, Richard
15:30-15:45			
15:45-16:00			