Nordic Steel 2019

The Technical University of Denmark, DTU Civil Engineering and the Danish Steel Institute welcome all delegates to Copenhagen to one of the important events for steel researchers and professionals. We hope that everyone enjoys the conference with the events that we have arranged for you. You must enjoy the welcome reception at Scandic Copenhagen Hotel, the Conference dinner including the presentation of the Bernt Johansson Outstanding Paper Awards. For further information on the conference please consult the Preface. To find your way please consult the Floor Plan.

The programme overview follows on the following pages and we have included internal links and links to the papers.

Programme overview

Time	Wednesday 18/9 – 2019	Thursday 19/9 – 2019	Friday 20/9 – 2019
08.30 – 09.00	**Registration**		
09.00 – 09.40	Opening/Welcome Keynote speaker: Ulrik Støtrup-Andersen	Good morning Keynote speaker: Kim Rasmussen	Parallel sessions
09.40 – 10.00	Coffee Break		
10.00 – 12.00	Parallel sessions	Parallel sessions	Parallel sessions continued
12.00 – 13.00	Lunch Break		
13.00 – 15.00	Parallel sessions	Parallel sessions	**13.00 – 13.30** **Closure of the scientific sessions** **Next Nordic Steel Conference**
15.00 – 15.20	Coffee Break		**13.30 – 16.30** **Technical tour of Amager Bakke**
15.20 – 17.00	Parallel sessions	Parallel session	
17.00	**Reception at the venue**		
18.45		**Conference dinner** **+** **Bernt Johansson Outstanding Paper Awards**	

Programme for Wednesday 18 September

Schedule/Rooms	Grand Ball	Amalienborg	Christiansborg	Fredensborg
09.00 – 09.10	**Opening Welcome**			
09.10 – 09.40	**Keynote speaker:** Ulrik Støtrup-Andersen Denmark: The Global Leader in Special Steel Structures			
09.40 – 10.00	Coffee break			
10.00 – 12.00	**Bridge Structures** Session A	**Fire Engineering** Session A	**Composite Steel Structures** Session A	**Fatigue & Fracture** Session A
12-00 – 13-00	Lunch			
13.00 – 15.00	**Bridge Structures** Session B	**Fire Engineering** Session B	**Composite Steel Structures** Session B	**Fatigue & Fracture** Session B
15.00 – 15.20	Coffee break			
15.20 – 17.00	**Modelling of Steel Structures**	**Innovative Structures**	**Composite Steel Structures** Session C	**Masts & Towers**

17.00	**Welcome reception at the venue Scandic Copenhagen Hotel**

Overview

Programme for Thursday 19 September

Schedule/Rooms	Grand Ball	Amalienborg	Christiansborg	Fredensborg
09.00 – 09.10	Good morning			
09.10 – 09.40	**Keynote speaker:** Kim Rasmussen Recent developments of the Component Method			
09.40 – 10.00	Coffee break			
10.00 – 12.00	**Bridge Structures** Session C	**Connections & Joints** Session A	**Cold-Formed Structures**	**Earthquake Engineering** Session A
12-00 – 13-00	Lunch			
13.00 – 15.00	**Stability of Structures** Session A	**Connections & Joints** Session B	**Fabrication & Construction**	**Earthquake Engineering** Session B
15.00 – 15.20	Coffee break			
15.20 – 17.00	**Stability of Structures** Session B	**Connections & Joints** Session C	**Offshore Structures**	**Design & Case Studies**

18.45	**Conference dinner + Bernt Johansson Outstanding Paper Awards**

Overview

Programme for Friday 20 September

Schedule/Rooms	Grand Ball	Amalienborg	Christiansborg	Fredensborg
09.00 – 09.40	**Building Structures**	**High Strength Steels**	**Eurocode & Codification**	**Stainless Steels**
09.40 – 10.00	Coffee break			
10.00 – 12.00	**Building Structures** continued	**High Strength Steels** continued	**Eurocode & Codification** continued	**Stainless Steels** continued
12.00 – 13.00	Lunch			
13.00 – 13.20	**Next Nordic Steel Conference** **Closure of the scientific sessions**			
13.20 – 13.30	Short break			
13.30 – 14.00	Short bus ride to Amager Bakke			
14.00 – 16.00	**Technical tour of Amager Bakke/Copenhill/Amager Slope**			
16.00 – 16.30	Short bus ride back to Scandic Copenhagen Hotel			

Overview

Morning sessions Wednesday 18 September from 10.00 -12.00

Schedule/Rooms	Grand Ball	Amalienborg	Christiansborg	Fredensborg
09.00 – 09.10	**Opening Welcome**			
09.10 – 09.40	**Keynote speaker:** Ulrik Støtrup-Andersen Denmark: The Global Leader in Special Steel Structures			
09.40 – 10.00	Coffee break			
10.00 – 12.00	**Bridge Structures** Session A	**Fire Engineering** Session A	**Composite Steel Structures** Session A	**Fatigue & Fracture** Session A
12-00 – 13-00	Lunch			
13.00 – 15.00	**Bridge Structures** Session B	**Fire Engineering** Session B	**Composite Steel Structures** Session B	**Fatigue & Fracture** Session B
15.00 – 15.20	Coffee break			
15.20 – 17.00	**Modelling of Steel Structures**	**Innovative Structures**	**Composite Steel Structures** Session C	**Masts & Towers**

17.00	**Welcome reception at the venue Scandic Copenhagen Hotel**

Overview

Grand Ball – **Bridge Structures** – Session A: Wednesday 10.00 – 12.00

Chairman: Prof. Josef Fink

Schedule	ID	Authors and presenters*	Title
10.00 – 10.20	01.01	Kjeld Thomsen*, Helge Skov Pedersen	The Sundsvall Bridge, Sweden
10.20 – 10.40	01.02	Kallia Spyridoni , Haohui Xin* , Marcel Hermans , Milan Veljkovic	Calibration of welding simulation parameters of fillet welding joints used in an orthotropic steel deck
10.40 – 11.00	01.04	Jaroslav Odrobiňák*, Matej Potančok	The Use of Box Cross-Sections for Railway Bridges with Encased Steel Girders
11.00 – 11.20	01.05	Gaute Mo, Birger Opgård* and Altea Cámara	Stovner Tower - accessible pedestrian walkway
11.20 – 11.40	01.06	Gaute Mo*, Mario Rando and Kathleen Overton	Boomerang and Jungle pedestrian bridges in Oslo
11.40 – 12.00	01.07	Christian Riis Petersen*, Bjarne Ibsen , Jonatan Stær Nissen	Hærvejsbroen, New Bridge for the Ancient Road, Viborg – Denmark

Overview Parallel Sessions

Amalienborg - **Fire Engineering** – Session A: Wednesday 10.00 – 12.00

Chairman: Prof. Mikko Malaska

Schedule	ID	Authors and presenters*	Title
10.00 – 10.20	11.01	Martin Thaarup* , Luisa Giuliani	Optimized design of steel car parks for fully spread fires
10.20 – 10.40	11.02	Jonas Tolstrup*, Luisa Giuliani, Harikrishna Narasimhan, Jakob Laigaard Jensen, Grunde Jomaas	Experimental study of epoxy coatings for fire protection of bridge cables
10.40 – 11.00	11.03	Harikrishna Narasimhan*, Luisa Giuliani, Grunde Jomaas, Jakob Laigaard Jensen	Fire risks in suspension bridges
11.00 – 11.20	11.04	Kamila Cábová* , Nikola Lišková,Tesfamariam Arha,Mikko Malaska, Mika Alanen, Kristo Mela, Sami Pajunen, František Wald	Temperature distribution of trapezoidal sheeting in fire
11.20 – 11.40	11.05	Jakob Laigaard Jensen*, Harikrishna Narasimhan, Luisa Giuliani, Grunde Jomaas	Development of fire protection for bridge cable systems
11.40 – 12.00	11.06	Élio Maia, Paulo Vila Real, Nuno Lopes, Carlos Couto*	General Method for the fire design of tapered steel columns - Out-of-plane flexural buckling

Overview Parallel Sessions

Christiansborg - **Composite Steel Structures** - Session A: Wednesday 10.00 – 12.00

Chairman: Prof. Christoph Odenbreit

Schedule	ID	Authors and presenters*	Title
10.00 – 10.20	04.01	Valentino Vigneri*, Christoph Odenbreit, Dennis Lam	Different load-bearing mechanisms in headed stud shear connections in composite beams with profiled steel sheeting
10.20 – 10.40	04.02	Lena Stempniewski*, Ulrike Kuhlmann	Pull-out failure of headed studs close to the concrete edge
10.40 – 11.00	04.03	Alina Gritsenko*, Martin Paul Nijgh, Milan Veljkovic	Towards a demountable composite slab floor system
11.00 – 11.20	04.04	Taygun Fırat Yolaçan*, Markus Schäfer	Investigation of the moment redistribution for steel – concrete continuous composite beams
11.20 – 11.40	04.05	I.M. Ahmed and K.D. Tsavdaridis*	Prefabricated Composite Flooring Systems with Normal and Lightweight Concretes
11.40 – 12.00	04.06	Jan Bujnak*, Peter Michalek, Zbigniew Perkowski	Experimental and Theoretical Research of Composite Truss Behaviour

Overview Parallel Sessions

Fredensborg – **Fatigue & Fracture** - Session A: Wednesday 10.00 – 12.00

Chairman: Prof. John Leander

Schedule	ID	Authors and presenters*	Title
10.00 – 10.20	10.01	Stefanie Röscher*, Markus Knobloch	Two-stage-model for the prognosis of fatigue life - application to butt welds
10.20 – 10.40	10.02	André Dürr*, Ömer Bucak, Jakob Roth	Performance of large-scale fatigue tests
10.40 – 11.00	10.03	Patrik Takács*, Josef Fink, Herbert Pardatscher, Thomas Petraschek	Innovative composite deck slab for railway bridges - Experimental investigations on the fatigue resistance of the dowel strips
11.00 – 11.20	10.04	Benjamin Möller*, Rainer Wagenera, Tobias Melz	Cyclic Material Behavior of Ultra-High-Strength Fine-Grained Steels and Welds for the Application in Fatigue Assessment Approaches
11.20 – 11.40	10.06	Sandro Citarelli*, Markus Feldmann	Fatigue Failure of runway beams due to wheel loads
11.40 – 12.00	10.07	Harald Unterweger	Improved remaining fatigue life of an orthotropic bridge deck - Combination of analyses, tests and measurements

Overview Parallel Sessions

Afternoon sessions Wednesday 18 September from 13.00 -15.00

Schedule/Rooms	Grand Ball	Amalienborg	Christiansborg	Fredensborg
09.00 – 09.10	**Opening Welcome**			
09.10 – 09.40	**Keynote speaker:** Ulrik Støtrup-Andersen Denmark: The Global Leader in Special Steel Structures			
09.40 – 10.00	Coffee break			
10.00 – 12.00	**Bridge Structures** Session A	**Fire Engineering** Session A	**Composite Steel Structures** Session A	**Fatigue & Fracture** Session A
12-00 – 13-00	Lunch			
13.00 – 15.00	**Bridge Structures** Session B	**Fire Engineering** Session B	**Composite Steel Structures** Session B	**Fatigue & Fracture** Session B
15.00 – 15.20	Coffee break			
15.20 – 17.00	**Modelling of Steel Structures**	**Innovative Structures**	**Composite Steel Structures** Session C	**Masts & Towers**

17.00	**Welcome reception at the venue Scandic Copenhagen Hotel**

Overview

Grand Ball – **Bridge Structures** – Session B: Wednesday 13.00 – 15.00

Chairman: Structural Engineer Christian Riis Petersen

Schedule	ID	Authors and presenters*	Title
13.00 – 13.20	01.08	Gaute Mo*, Fernando Ibáñez, Göran Werme, Henrik Hermansson,and Johan Eriksson	Väster pedestrian and cycle bridge
13.20 – 13.40	01.09	Chao Xu, Abheetha Peiris and Issam Harik*	Analysis and Load Rating of Corrugated Steel Arch Culverts
13.40 – 14.00	01.10	Kjeld Thomsen*, Christian Riis Petersen	Successful Moveable Bridges - A description of 5 Successful Moveable Danish Bridges
14.00 – 14.20	01.11	Gaute Mo*, Kathleen Overton and Fernando Ibáñez	Norgesporten road bridge, the gateway to Norway
14.20 – 14.40	01.12	Jesper Pihl*	Design and construction of the Hålogaland Bridge
14.40 – 15.00	01.13	Bernhard Glatz*, Josef Fink	Vehicle-Bridge-Interaction in the Dynamic Calculation of Railway Bridges Case - Case Study and Dynamic Analysis for 75 Existing Simply Supported Bridge Structures of the Austrian Railway Network

Overview Parallel Sessions

Amalienborg – Fire Engineering. - Session B: Wednesday 13.00 – 15.00

Chairman: Dr. Jakob Laigaard Jensen

Schedule	ID	Authors and presenters*	Title
13.00 – 13.20	11.07	Clemens Beiter*, Susanne Reichel	Deformation of Installation Mounting Rails in Case of Fire - Deviation between strains acc. EN 1993-1-2 and tested strains above 760°C
13.20 – 13.40	11.08	Saani Shakil*, Wei Lu, Jari Puttonen	Repeated loading and unloading of steel material in fire
13.40 – 14.00	11.09	Mikko Malaska*, Mika Alanen, Kamila Cábová, Nikola Lišková, Kristo Mela, Sami Pajunen, František Wald	Experimental study on temperature distribution of sandwich panel joints in fire
14.00 – 14.20			
14.20 – 14.40			
14.40 – 15.00			

Overview Parallel Sessions

Christiansborg – Composite Structures - Session B: Wednesday 13.00 – 15.00

Chairman: Dr Konstantinos Daniel Tsavdaridis

Schedule	ID	Authors and presenters*	Title
13.00 – 13.20	04.07	Milad Soltanalipour*, Miquel Ferrer, Frederic Marimon	An experimentally validated study for open rib profiles steel-concrete composite slabs behavior in partial connection
13.20 – 13.40	04.09	Georgios Christou*, Martin Classen, Kevin Wolters, Yannick Broschart	Fatigue of composite constructions with composite dowels
13.40 – 14.00	04.10	Christoph Odenbreit*, András Kozma	Parametric study on non-ductile demountable shear connectors
14.00 – 14.20	04.11	Rui Simões*, Miguel Pereira	Vertical shear behaviour of steel-concrete composite slabs
14.20 – 14.40	04.12	Yannick Broschart*, Wolfgang Kurz, Kevin Wolters, Georgios Christou, Martin Claßen	Influencing Parameters on the Load-bearing Capacity of Composite Dowels positioned close to the free Surface of Concrete Slabs
14.40 – 15.00			

Overview Parallel Sessions

Fredensborg – Fatigue & Fracture – Session B: Wednesday 13.00 – 15.00

Chairman: Prof. Paulo Vila Real

Schedule	ID	Authors and presenters*	Title
13.00 – 13.20	10.09	Naoki Nozawa*, Masahiro Sakano, Akiko Tabata, Hiroki Sugiyama and Hironori Ishii	Fatigue behavior and retrofit of bulb rib orthotropic steel decks - With R40 slits in cross beams
13.20 – 13.40	10.10	Oskar Skoglund*, John Leander	The impact of local geometry on the fatigue life of a welded structural detail
13.40 – 14.00			
14.00 – 14.20			
14.20 – 14.40			
14.40 – 15.00			

Overview Parallel Sessions

Afternoon sessions Wednesday 18 September from 15.20 – 17.00

Schedule/Rooms	Grand Ball	Amalienborg	Christiansborg	Fredensborg
09.00 – 09.10	**Opening Welcome**			
09.10 – 09.40	**Keynote speaker:** Ulrik Støtrup-Andersen Denmark: The Global Leader in Special Steel Structures			
09.40 – 10.00	Coffee break			
10.00 – 12.00	**Bridge Structures** Session A	**Fire Engineering** Session A	**Composite Steel Structures** Session A	**Fatigue & Fracture** Session A
12-00 – 13-00	Lunch			
13.00 – 15.00	**Bridge Structures** Session B	**Fire Engineering** Session B	**Composite Steel Structures** Session B	**Fatigue & Fracture** Session B
15.00 – 15.20	Coffee break			
15.20 – 17.00	**Modelling of Steel Structures**	**Innovative Structures**	**Composite Steel Structures** Session C	**Masts & Towers**

17.00	**Welcome reception at the venue Scandic Copenhagen Hotel**

Overview

Grand Ball – Modelling of Steel Structures: Wednesday 15.20 – 17.00

Chairman: Dr. Jurgen Becque

Schedule	ID	Authors and presenters*	Title
15.20 – 15.40	15.01	Stefanos Gkatzogiannis*, Peter Knoedel, Thomas Ummenhofer	FE Simulation of High Frequency Mechanical Impact (HFMI) Treatment – First Results
15.40 – 16.00	15.03	Marina D'Antimo*, Massimo Latour, Jean-Pierre Jaspart, Jean-François Demonceau	Numerical and experimental investigation of simply supported steel beams under drop-weight impact tests
16.00 – 16.20	15.04	Adriana Chesoan*, Aurel Stratan, Dominiq Jakab , Dan Dubina	The influence of joint modelling on the seismic design of steel frames
16.20 – 16.40			
16.40 – 17.00			

Overview Parallel Sessions

Amalienborg – Innovative Structures: Wednesday 15.20 – 17.00

Chairman: Prof. Keerthan Poologanathan

Schedule	ID	Authors and presenters*	Title
15.20 – 15.40	13.01	Walter Langedijk*, Jan de Graaf	Duplex steel segment gate Södertälje (Sweden)
15.40 – 16.00	13.02	Sören Grimm*, Jörg Lange	Shell Structures Made of Curved Sandwich Panels - Assessment of the Load-Bearing Capacity
16.00 – 16.20	13.05	Peter Madsen Nordestgaard, Jesper Jensen, Peter Mortensen, Mikkel Wyrtz*, Mantas Mikulenas, Alexandru Eugen Trifan	Application of Parametric Design in Project Containing Steel Structures - Parametric Light-Rail Steel Bridge
16.20 – 16.40			
16.40 – 17.00			

Overview Parallel Sessions

Christiansborg – Composite Structures - Session C: Wednesday 15.20 – 17.00

Chairman: Prof. Jari Puttonen

Schedule	ID	Authors and presenters*	Title
15.20 – 15.40	04.13	Johannes Schorr*, Ulrike Kuhlmann	Design of slim-floors and their connections between steel and concrete
15.40 – 16.00	04.14	Vincent Kvočák*, Viktória Kožlejová, Daniel Dubecký, Ruslan Kanishchev, Patrícia Vaňová	Experimental and Software Analysis of Composite Action in Steel-Concrete Composite Bridges with Continuous Shear Connectors
16.00 – 16.20			
16.20 – 16.40			
16.40 – 17.00			

Overview Parallel Sessions

Fredensborg – Masts & Towers: Wednesday 15.20 – 17.00

Chairman: Dr. Markus Kettler

Schedule	ID	Authors and presenters*	Title
15.20 – 15.40	14.01	Hendrik Schulze Spüntrup, Marion Rauch*, Markus Knobloch	Comparative Study on the Fatigue Assessment Concepts for Horizontal Butt Welds of Wind Turbine Towers
15.40 – 16.00	14.02	Martin Jespersen*, Ulrik Støttrup-Andersen	Guyed Wind Turbine Towers - Developments and outlook
16.00 – 16.20	14.03	Susanna Koppány*	Loss of prestress in spiral strand guyropes in masts
16.20 – 16.40	14.04	Peter Holmstrøm*, Mogens G. Nielsen, Ola Lindgren	Replacement of two 320m masts in Sweden
16.40 – 17.00			

Overview Parallel Sessions

Morning sessions Thursday 19 September from 10.00-12.00

Schedule/Rooms	Grand Ball	Amalienborg	Christiansborg	Fredensborg
09.00 – 09.10	Good morning			
09.10 – 09.40	**Keynote speaker:** Kim Rasmussen Recent developments of the Component Method			
09.40 – 10.00	Coffee break			
10.00 – 12.00	**Bridge Structures** Session C	**Connections & Joints** Session A	**Cold-Formed Structures**	**Earthquake Engineering** Session A
12-00 – 13-00	Lunch			
13.00 – 15.00	**Stability of Structures** Session A	**Connections & Joints** Session B	**Fabrication & Construction**	**Earthquake Engineering** Session B
15.00 – 15.20	Coffee break			
15.20 – 17.00	**Stability of Structures** Session B	**Connections & Joints** Session C	**Offshore Structures**	**Design & Case Studies**

18.45	**Conference dinner + Bernt Johansson Outstanding Paper Awards**

Overview

Grand Ball – Bridge Structures – Session C: Thursday 10.00 – 12.00

Chairman: Structural Engineer Gaute Mo

Schedule	ID	Authors and presenters*	Title
10.00 – 10.20	01.14	Marco Mezzi*, Paolo Petrella, Luca Cavacchioli, Vincenzo Cefaliello, Gianluca Nestovito, Gabriele Spirolazzi	Problems and Innovative Solutions in Retrofitting and Enhancement of Existing and Historical Railway Steel Bridge
10.20 – 10.40	01.15	Reinald Top*, Leo ten Wolde, Wouter Visser	Hjulstabron (Hjulsta bridge), Sweden
10.40 – 11.00	01.16	Dennis Rademacher*	Maintenance free corrosion protection for composite bridges with hot-rolled sections
11.00 – 11.20	01.18	Olivia Mirza*, Syhra Fieck, Sameera Pathirana and Fidelis Mashiri	Optimisation of Retrofitted Steel Bridge Girders Subjected to Fatigue Loading
11.20 – 11.40	01.19	Matthias Kraus, Björn Wittor*	Digital Roads - New Potentials for Assessing the Structural Behaviour of Steel and Composite Bridges
11.40 – 12.00			

Overview Parallel Sessions

Amalienborg – Connections & Joints – Session A: Thursday 10.00 – 12.00

Chairman: Prof. František Wald

Schedule	ID	Authors and presenters*	Title
10.00 – 10.20	05.02	Adrien Corman*, Jean-Pierre Jaspart, Jean-François Demonceau	Resistance of the beam-to-column component "column web panel in shear" – numerical and analytical investigations
10.20 – 10.40	05.03	Eduardo Bayo, Javier Gracia*	Characterization of the behaviour of welded steel joints through modal components
10.40 – 11.00	05.04	Alexander Engel*, Jörg Lange	Resistance of Direct Fixings of Sandwich Panels under Cyclic Loading
11.00 – 11.20	05.05	Thilo Feucht*, Jörg Lange, Maren Erven	3-D-Printing with Steel - Additive Manufacturing of Connection Elements and Beam Reinforcements
11.20 – 11.40	05.06	Kristo Mela*, Lauri Hietaharju	Cost optimization of end-plate connections
11.40 – 12.00	05.07	Anders Bau Hansen*, Jeppe Jönsson	Mode-based Beam and Connection Analysis of Frames

Overview Parallel Sessions

Christiansborg – Cold-formed Structures: Thursday 10.00 – 12.00

Chairman: M.Sc. Andreas Müller

Schedule	ID	Authors and presenters*	Title
10.00 – 10.20	03.01	Sándor Ádány*	Understanding the buckling behavior of cold-formed steel members with slotted web by using cFEM
10.20 – 10.40	03.02	Pedro Casariego*, Miquel Casafont, Miquel Ferrer, Frederic Marimon	Compression behaviour of cold formed steel trapezoidal sheeting with transverse corrugations
10.40 – 11.00	03.03	Gatheeshgar Perampalam*, Keerthan Poologanathan, Shanmuganathan Gunalan, Jun Ye, Brabha Nagaratnam	Optimum Design of Cold-formed Steel Beams - Particle Swarm Optimisation and Numerical Analysis
11.00 – 11.20	03.04	Jurgen Becque*	Optimization of cold-formed steel products: achievements, challenges and opportunities
11.20 – 11.40	03.05	Gatheeshgar Perampalam*, Ross Dobson, Keerthan Poologanathan, Konstantinos Daniel Tsavdaridis, Brabha Nagaratnam, Eleni Iacovidou	Modular Building Design - Post-Brexit Housing
11.40 – 12.00	03.06	Ruth María Gutiérrez*, Alfonso Loureiro, Jose Manuel Reinosa, Manuel Lopez	Numerical study of semi-rigid behaviour joints for slender purlins

Overview Parallel Sessions

Fredensborg – Earthquake Engineering Session A: Thursday 10.00 – 12.00

Chairman: Dr. Astrid Winther Fischer

Schedule	ID	Authors and presenters*	Title
10.00 – 10.20	07.01	T.Y. Yang *, Tianyi Li , Lisa Tobber , Xiao Pan	Experimental Test of Novel Honeycomb Structural Fuse
10.20 – 10.40	07.02	Paul W. Richards*	A Repairable Connection for Earthquake-Resisting Moment Frames
10.40 – 11.00	07.03	Mehmet Bakır Bozkurt , Cem Topkaya*	Splice Connection Details for Eccentrically Braced Frame Replaceable Links
11.00 – 11.20	07.04	Chien-Liang Lee*, Yen-Po Wang, Meng-Yan Cai, Yu-Tung Kuan, Ging-Huei Huang	An Experimental Verification of Seismic Structural Control - Using In-Plane Oval Dampers
11.20 – 11.40	07.05	Daisuke Aoki *, Yoshiyuki Bando, Naohiko Watanabe, Moriaki Suzuki	Development of Seismic Device for Stainless Steel Rectangular Water Tank at Short Period Earthquake
11.40 – 12.00	07.06	Antonios K. Flogeras, George A. Papagiannopoulos, Dimitris L. Karabalis*	Seismic Response of Steel Structures with Properly Detailed - Tension-Only Steel Braces

Overview Parallel Sessions

Afternoon sessions Thursday 19 September from 13.00-15.00

Schedule/Rooms	Grand Ball	Amalienborg	Christiansborg	Fredensborg
09.00 – 09.10	Good morning			
09.10 – 09.40	**Keynote speaker:** Kim Rasmussen Recent developments of the Component Method			
09.40 – 10.00	Coffee break			
10.00 – 12.00	**Bridge Structures** Session C	**Connections & Joints** Session A	**Cold-Formed Structures**	**Earthquake Engineering** Session A
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13.00 – 15.00	**Stability of Structures** Session A	**Connections & Joints** Session B	**Fabrication & Construction**	**Earthquake Engineering** Session B
15.00 – 15.20	Coffee break			
15.20 – 17.00	**Stability of Structures** Session B	**Connections & Joints** Session C	**Offshore Structures**	**Design & Case Studies**

18.45	**Conference dinner + Bernt Johansson Outstanding Paper Awards**

Overview

Grand Ball – Stability of Structures – Session A: Thursday 13.00 – 15.00

Chairman: Dr. Jurgen Becque

Schedule	ID	Authors and presenters*	Title
13.00 – 13.20	17.01	Andreas Müller*, Andreas Taras	Preliminary study on the impact of initial imperfections on the post-buckling rotation of square hollow sections in uniform bending
13.20 – 13.40	17.02	Šarūnas Kelpša*, Simo Peltonen	Local Buckling Coefficient Calculation Method of Thin Plates with Round Holes
13.40 – 14.00	17.03	Silvio Mämpel*, Matthias Kraus	Influence of Structural Detailing on the Stability Behaviour of Truss Girders
14.00 – 14.20	17.04	Markus Feldmann*, Jonas Nonn, Christoph Heinemeyer	A consistent approach for flexural and lateral torsional buckling as basis for a general buckling curve
14.20 – 14.40	17.05	József Szalai*, Ferenc Papp	New stability design methodology through overall linear buckling analysis
14.40 – 15.00	17.06	Ferenc Papp*, József Szalai, Movahedi R. Majid	Out-of-Plane Buckling Assessment of Frames through Overall Stability Design Method

Overview Parallel Sessions

Amalienborg – Connections & Joints – Session B: Thursday 13.00 – 15.00

Chairman: Dr. Kristo Mela

Schedule	ID	Authors and presenters*	Title
13.00 – 13.20	05.08	Katharina Bräutigam*, Peter Knoedel, Thomas Ummenhofer	Torsional Capacity of Slip Joints with Polygonal Hollow Sections
13.20 – 13.40	05.09	Serge Parent*, Nathalie Roy, David Gauthier	Study of the Rigidity of a Concentrically Braced Frame Connection Using End Plates
13.40 – 14.00	05.10	Bálint Vaszilievits-Sömjén*, József Szalai, Majid Mohavedi Rad	Validation of simple superelement model of warping transfer in moment connections of portal frames
14.00 – 14.20	05.11	František Wald, Martin Vild, Jan Vesecký, Štěpán Legner, Jaromír Kabeláč, Lubomír Šabatka	Multi-Level Joints and Element Design
14.20 – 14.40	05.12	Nariman Afzali*, Christoph Abraham, Natalie Stranghöner	Comparative numerical investigations into the determination of slip factors according to the EN 1090-2 and RCSC
14.40 – 15.00	05.13	Jozef Gocál*, Jaroslav Odrobiňák	Stiffness of steel-to-timber connection under cyclic loading

Overview Parallel Sessions

Christiansborg – Fabrication & Construction: Thursday 13.00 – 15.00

Chairman: Structural Engineer Mogens G. Nielsen

Schedule	ID	Authors and presenters*	Title
13.00 – 13.20	09.01	Ioan Andrei Gîrbacea*, Martin Paul Nijgh, Milan Veljkovi	Proof of concept of a demountable steel-concrete composite flooring system
13.20 – 13.40	09.02	Ronny Kühne*, Markus Feldmann, Sandro Citarelli, Uwe Reisgen, Rahul Sharma, Lukas Oster	3D printing in steel construction with the automated Wire Arc Additive Manufacturing
13.40 – 14.00	09.03	Luigi Mario Viespoli*, Francesco Mutignani, Filippo Berto	Medium to high cycle fatigue investigation on hot dip galvanized structural steel welded joints
14.00 – 14.20	09.04	Markus Walder*	Steel structures for the new “Seilbahn Zugspitze” - on top of Germany!
14.20 – 14.40			
14.40 – 15.00			

Overview Parallel Sessions

Fredensborg – Earthquake Engineering – Session B: Thursday 13.00 – 15.00

Chairman: Prof Cem Topkaya

Schedule	ID	Authors and presenters*	Title
13.00 – 13.20	07.07	Panagiota S. Katsimpini, George A. Papagiannopoulos, Dimitris L. Karabalis*	Seismic Response of Steel Structures Equipped with the Seesaw System
13.20 – 13.40	07.08	Peter Knoedel*, Thomas Ummenhofer	Accidental torsion with industrial buildings – over-conservative rules in ec8
13.40 – 14.00	07.09	Tomoaki Nagai*, Kenshi Ochi	Influence of material on inelastic behaviour and local buckling of SHS Members under cyclic loading
14.00 – 14.20	07.10	Astrid W. Fischer*, James K. Guest, Benjamin W. Schafer	Novel Building Diaphragm Layouts Generated through Topology Optimization
14.20 – 14.40	07.11	Borjan Petreski*, Igor Gjorgjiev	Strength and Stiffness Deterioration Material Influence on Demand Parameters in Steel Moment Frames
14.40 – 15.00			

Overview Parallel Sessions

Afternoon sessions Thursday 19 September from 15.20-17.00

Schedule/Rooms	Grand Ball	Amalienborg	Christiansborg	Fredensborg
09.00 – 09.10	Good morning			
09.10 – 09.40	**Keynote speaker:** Kim Rasmussen Recent developments of the Component Method			
09.40 – 10.00	Coffee break			
10.00 – 12.00	**Bridge Structures** Session C	**Connections & Joints** Session A	**Cold-Formed Structures**	**Earthquake Engineering** Session A
12-00 – 13-00	Lunch			
13.00 – 15.00	**Stability of Structures** Session A	**Connections & Joints** Session B	**Fabrication & Construction**	**Earthquake Engineering** Session B
15.00 – 15.20	Coffee break			
15.20 – 17.00	**Stability of Structures** Session B	**Connections & Joints** Session C	**Offshore Structures**	**Design & Case Studies**

18.45	**Conference dinner + Bernt Johansson Outstanding Paper Awards**

Overview

Grand Ball – Stability of Structures – Session B: Thursday 15.20 – 17.00

Chairman: Dr. Sándor Ádány

Schedule	ID	Authors and presenters*	Title
15.20 – 15.40	17.07	Gilles Van Staen*, Hans De Backer, Philippe Van Bogaert	Influence of Slenderness Ratio on the Buckling Behaviour of Curved Panels in Pure Shear
15.40 – 16.00	17.08	Andreas Toffolon*, Andreas Müller, Igor Niko, Andreas Taras	Experimental and numerical analysis of the local and interactive buckling behaviour of hollow sections
16.00 – 16.20	17.09	Thomas Hansen*	Post-buckling Strength of Plate Girders subjected to Shear - New Design Method
16.20 – 16.40	17.10	Gábor Hajdú*	The Validity of the Universal Transformation Method in Global Buckling Design
16.40 – 17.00			

Overview Parallel Sessions

Amalienborg – Connections & Joints – Session C: Thursday 15.20 – 17.00

Chairman: Dr. Javier Gracia

Schedule	ID	Authors and presenters*	Title
15.20 – 15.40	05.14	Miku Kurosawa*, Shoichi Kishiki, Nobuhiko Tatsumi	Strength evaluation of bolted connections with slotted holes in non-structural components
15.40 – 16.00	05.15	Mark Kokborg Schmidt*, Mogens G. Nielsen, Brian Endahl, Karl Emil Steenholt-Eliasson	Thor – a New Design of Overhead Transmission Line Towers
16.00 – 16.20	05.16	Yong-Qiang Xia, Nan Xiao*, Xiao-Qian Qian	Research on the Semi-rigid Joint with T-stub in Beam-to-Column Connection - Suggestion for Initial Rotational Stiffness Formula
16.20 – 16.40	05.17	Oscar Gutiérrez*, Carlos Bermúdez	Connections in mixed structures with steel columns with threaded rods and normal strength concrete beams - Numerical analysis with incremental load
16.40 – 17.00	05.18	Carsten Kunde, Luigi Di Gregorio	Time-optimized assembly of bridge bearings - Force-fit gap compensation of steel-connections with metal-polymers

Overview Parallel Sessions

Christiansborg – Offshore Structures: Thursday 15.20 – 17.00

Chairman: Director Ulrik Støtrup-Andersen

Schedule	ID	Authors and presenters*	Title
15.20 – 15.40	16.01	Martin Bjerre Nielsen*, Jacob Fisker Jensen, Christopher Harper, Lennart Skovbjerg Knudsen, Ronnie Refstrup Pedersen	State-of-the-Art Framework for Structural Design of Offshore Wind Jacket Foundations
15.40 – 16.00	16.02	Peter Schaumann, Karsten Schürmann*, Andreas Pittner, Michael Rethmeier	Automatically Welded Tubular X-Joints for Jacket Substructures - Prediction of the Technical Fatigue Crack Location
16.00 – 16.20	16.03	Bulent Erkmen*, Burak Talha Kilic	Determination of Effective Breadth Width of Steel Plate-Stiffener Based on Nonlinear FE Analysis
16.20 – 16.40			
16.40 – 17.00			

Overview Parallel Sessions

Fredensborg – Design & Case Studies: Thursday 15.20 – 17.00

Chairman: Dipl.-Ing. Björn Wittor

Schedule	ID	Authors and presenters*	Title
15.20 – 15.40	06.01	Ioan Andrei Gîrbacea*, Martin Paul Nijgh, Milan Veljkovic	Economic viability of demountable steel-concrete composite beams
15.40 – 16.00	06.02	Özer Zeybeka, Cem Topkaya*	Effect of Support Width on Stress Resultants in Ring Beams Interacting with Silo Shells
16.00 – 16.20	06.03	Chrysanthos Maraveas*	The design of tall windbreak panels - Design issues and a case study
16.20 – 16.40	06.04	Pieter van Lierop*	No standard lock gates for the new sea lock in IJmuiden, the largest lock in the world
16.40 – 17.00			

Overview Parallel Sessions

Morning sessions Friday 20 September from 09.00-12.00

Schedule/Rooms	Grand Ball	Amalienborg	Christiansborg	Fredensborg
09.00 – 09.40	**Building Structures**	**High Strength Steels**	**Eurocode & Codification**	**Stainless Steels**
09.40 – 10.00	Coffee break			
10.00 – 12.00	**Building Structures** continued	**High Strength Steels** continued	**Eurocode & Codification** continued	**Stainless Steels** continued
12.00 – 13.00	Lunch			
13.00 – 13.20	**Next Nordic Steel Conference** **Closure of the scientific sessions**			
13.20 – 13.30	Short break			
13.30 – 14.00	Short bus ride to Amager Bakke			
14.00 – 16.00	**Technical tour of Amager Bakke/Copenhill/Amager Slope**			
16.00 – 16.30	Short bus ride back to Scandic Hotel			

Overview

Grand Ball – Building Structures: Friday 09.00 – 12.00

Chairman: Dr. Thomas Hansen

Schedule	ID	Authors and presenters*	Title
09.00 – 09.20	02.01	Yuka Ohtani*, Hideki Idota	Smooth Hysteretic Model of H-shaped Steel Beams
09.20 – 09.40	02.02	Peter Madsen Nordestgaard*, Casper Højgaard Arndt	AMAGER BAKKE - A steel building with the design challenge of creating a world famous recreational roof
09.40 – 10.00	Coffee break		
10.00 – 10.20	02.03	Simon de Neumann*	Oodi - Helsinki Central Library: Making the architectural vision a reality
10.20 – 10.40	02.04	Torben Ramsussen*, Casper Højgaard Arndt, Peter Madsen Nordestgaard	AMAGERVÆRKET BIO4 - A steel building with a remarkable facade made of tree logs
10.40 – 11.00	02.05	Ole Vanggaard Hans Chr. Weidemann*, Peter Madsen Nordestgaard	College of Falkonergården, Frederiksberg, Denmark - Structural and architecturally innovative multifunctional steel hall
11.00 – 11.20	02.06	Niels Tornsberg*, Lars Olaf Møller-Hansen	Kistefos Museum - Transforming great architecture into buildable project
11.20 – 11.40	02.07	Peter Madsen Nordestgaard, Kenneth Graa, Kenneth H. Borbjerggaard*	The Gate to Gellerup, Aarhus, Denmark - Steel structures substitute part of concrete building
11.40 – 12.00	02.08	Andreas Hemker, Jochen Bartenbach and André Dürr*	Building Maintenance Management for Steel Structures in Industrial Facilities

Overview Parallel Sessions

Amalienborg – High Strength Steels: Friday 09.00 – 12.00

Chairman: Prof. Ferenc Papp

Schedule	ID	Authors and presenters*	Title
09.00 – 09.20	12.01	S.P. Chiew*, C. Cheng, M.S. Zhao, C.K. Lee, T.C. Fung	Experimental Study of Welding Effect on S690Q High Strength Steel Butt Joints
09.20 – 09.40	12.02	Richard Stroetmann*, Thoralf Kästner	Influence of the execution parameters on the welds of high-strength steels
09.40 – 10.00	Coffee break		
10.00 – 10.20	12.03	Md. Imran Kabir*, C. K. Lee, Mohammad M. Rana, Y. X. Zhang	Flexural behaviour of engineered cementitious composite encased high strength steel composite beam
10.20 – 10.40	12.04	Roland Abspoel*	The optimal moment capacity of plate girders - Parameter research on a plate girder under pure bending and a design strategy
10.40 – 11.00	12.05	Gabriel Sabau*, Ove Lagerqvist, Nancy Baddoo	Stronger steels, higher penalties - Evaluation of flexural buckling experiments performed on welded high-strength steel struts
11.00 – 11.20	12.06	Richard Stroetmann*, Thoralf Kästner	Numerical analyses on welded joints at high-strength steels
11.20 – 11.40	12.07	Simon Schaffrath*, Markus Feldmann	Prediction of ultimate resistance by application of damage theory with special regard to HSS
11.40 – 12.00			

Overview Parallel Sessions

Christiansborg – Eurocode & Codification: Friday 09.00 – 12.00

Chairman: Prof. Kim Rasmussen

Schedule	ID	Authors and presenters*	Title
09.00 – 09.20	08.01	Andrea Toffolon, Andreas Taras*	Proposal of a design curve for the overall resistance of cold formed RHS and SHS members
09.20 – 09.40	08.02	Mogens G. Nielsen*	New Eurocode for Towers, Masts and Chimneys
09.40 – 10.00	Coffee break		
10.00 – 10.20	08.03	Markus Kettler*, Harald Unterweger	Laboratory tests on a real crane runway girder - with welded box section and eccentric wheel loading
10.20 – 10.40	08.04	Carlos Graciano*, Nelson Loaiza	A novel approach for elastic buckling loads in longitudinally stiffened webs subjected to patch loading
10.40 – 11.00	08.05	Rachid Annan, Martin Bechtold, Heinz Friedrich, Johan Maljaars, Thomas Misiek*, Michael Paschen	Fatigue design of tension components - Revision and further development of EN 1993-1-11
11.00 – 11.20	08.06	John Leander*, Oskar Skoglund	A calibrated verification model for fatigue assessment of road bridges
11.20 – 11.40	08.07	Simon Mathias Gren*, John Elnegaard Hansen, Jens Christian Kærn	Biaxial compression in class 4 orthotropic steel panels using Eurocode methods
11.40 – 12.00	08.08	Thomas Misiek, Bert Norlin, Torsten Höglund*	European buckling curves for aluminium compression members - A review of proposals for revision

Overview Parallel Sessions

Fredensborg – Stainless Steels: Friday 09.00 – 12.00

Chairman: Assoc. Dr. Anders Bau Hansen

Schedule	ID	Authors and presenters*	Title
09.00 – 09.20	18.01	K.A. Cashell*, M. Malaska, M. Khan, M. Alanen, K. Mela	Numerical analysis of the behaviour of stainless steel cellular beam in fire
09.20 – 09.40	18.02	Mikko Malaska*, Katherine Cashell, Mika Alanen, Kristo Mela, Sheida Afshan	Experimental behaviour of stainless steel cellular beam in fire
09.40 – 10.00	Coffee break		
10.00 – 10.20	18.03	Ishqy Fareed*, Wanniarachchi Somadasa, Keerthan Poologanathan, Shanmuganathan Gunalan, Marco Corradi, Sivaram Sivapalan	Finite Element Analyses of Cold-formed Stainless Steel Beam with Web Openings in Shear
10.20 – 10.40	18.04	Peter Langenberg, Pawel Kucharczyk, Johan Pilhagen, Natalie Stranghöner*, Erik Schedin	Application of the Master Curve concept on the choice of duplex stainless steel to avoid brittle fracture
10.40 – 11.00	18.05	Natalie Stranghöner, Dominik Jungbluth*, Christoph Abraham	Guidance for Preloading of Stainless Steel Bolting Assemblies using a Bolt Tightening Qualification Procedure
11.00 – 11.20	18.06	Tom Molkens*, Barbara Rossi	Simplified Bending Capacity Formulation Based on the Continuous Strength Method
11.20 – 11.40	18.07	Madhushan Dissanayake*, Keerthan Poologanathan, Shanmuganathan Gunalan, Konstantinos Daniel Tsavdaridis, Brabha Nagaratnam	Finite Element Analyses of Cold-formed Stainless Steel Beams Subject to Shear
11.40 – 12.00	18.08	Ishqy Fareed*, Wanniarachchi Somadasa, Keerthan Poologanathan, Shanmuganathan Gunalan, Valentina Beatini, Sivaram Sivabalan	Web Crippling Behaviour of Cold-formed Stainless Steel Beams with Non-Circular Web Opening

Overview Parallel Sessions