

**18th International Symposium
on Tubular Structures**

ISTS 18

Symposium Brochure

17th-20th OCTOBER 2023

BEIJING, CHINA

CONTENT

Welcome Message	01
Organisation	02
Committees	03
Event Overview	04
Tips	05
Venue Location	06
Civil Buildings Map	07
Transport Guide	08-09
Technical Tour	10
Programme	11-20
Tsinghua Campus & Museums	21

► WELCOME MESSAGE

After the success of the previous 17 conferences held around the world, the upcoming 18th International Symposium on Tubular Structures (ISTS 18) will be held in Beijing, China during October 17-20, 2023.

The conference is intended to provide a forum to discuss the recent progress and advances in the research, design and practice of tubular structures.

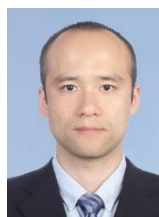
It would be of interest to researchers, academics, manufacturers of hollow sections or relevant construction products, architects, trade associations, design engineers, steel fabricators, owners or developers of tubular structures and postgraduate students.

We are looking forward to your participation in the ISTS 18 Conference and welcoming you to Beijing!



Lin-Hai Han
Chair

Guangxi University/Tsinghua University



Wei Li
Chair

Tsinghua University

ORGANISATION

Organisers



Tsinghua University



Guangxi University

Co-Organisers



China Steel
Construction Society



China Construction
Metal Structure Association



China Association for
Engineering Construction
Standardization

National Technical Standard
Innovation Base of Construction
Engineering

State Key Laboratory of
Featured Metal Materials and
Life-cycle Safety for Composite
Structure



International Institute
of Welding

New Western Land-Sea Corridor
Development Institute

China Civil Engineering Journal

COMMITTEES

International Scientific Committee

JA Packer	Canada (Chair)	M Lefranc	Norway
E Batista	Brazil	RT Leon	USA
MA Bradford	Australia	W Li	China
D Camotim	Portugal	L Lima	Brazil
TM Chan	Hong Kong, China	JP McCormick	USA
YY Chen	China	XD Qian	Singapore
SP Chiew	Singapore	M Serrano	Spain
YS Choo	Singapore	R Stroetmann	Gemany
LS da Silva	Portugal	LW Tong	China
A Elghazouli	UK	T Ummenhofer	Germany
O Fleischer	Germany	B Uy	Australia
L Gardner	UK	M Veljkovic	Netherlands
LH Han	China	YY Wang	China
JF Hajjar	USA	F Wald	Czech Republic
A Heidarpour	Australia	Y Wang	UK
S Herion	Germany	J Wardenier	Netherlands
G Iglesias	Spain	K Weynand	Germany
JP Jaspart	Belgium	T Wilkinson	Australia
U Kuhlmann	Germany	E Yamaguchi	Japan
D Lam	UK	H Yang	China
CH Lee	Korea	B Young	Hong Kong, China
		XL Zhao	Hong Kong, China

Organising Committee

Chairs

Prof. Lin-Hai Han

A/Prof. Wei Li

Members

Dr. Hui-Wen Tian (Secretary)

Dr. Bo-Wen Chen

Ms. Cong-Ying Chen

Mr. Hao Chen

Ms. Jia-Tong Chi

Mr. Hao Guan

A/Prof. Chao Hou

A/Prof. Chuan-Chuan Hou

Mr. Jie Hu

A/Prof. Xiao-Jun Ke

Mr. Long-Hai Lai

Mr. Bo Li

Ms. Xin-Yi Li

Dr. Dan-Yang Ma

Mr. Jia-Jun Song

A/Prof. Fa-Cheng Wang

Mr. Pu Wang

Dr. Zhi-Cheng Yang

Ms. Chien Hui Yeong

Mr. Cheng-Yu Zhu

Mr. Tao Zhu-Ge

EVENT OVERVIEW

OCT 17 09:00 - 21:00

18:30 - 21:00

Registration

Lobby, New Civil Building

Welcome Reception

Room B200, New Civil Building

OCT 18 08:00 - 17:30

08:30 - 08:50

08:50 - 09:35

09:35 - 10:15

10:15 - 12:00

12:00 - 13:30

13:30 - 15:00

15:00 - 15:30

15:30 - 17:15

17:30 - 18:00

19:00 - 21:00

Registration

Lobby, New Civil Building

Conference Opening Ceremony

Room 100, New Civil Building

Kurobane Lecture

Room 100, New Civil Building

Group Photo/Tea & Coffee Break

SESSION No.1

Tubular Joints

Room B200, New Civil Building

SESSION No.2

Additive Manufacturing & Welding

Room 100, New Civil Building

Lunch

Room B200, New Civil Building

SESSION No.3

Tubular Joints

Room B200, New Civil Building

SESSION No.4

High Strength Steel

Room 201, Heshanheng Building

Tea & Coffee Break

SESSION No.5

Tubular Joints & Members

Room B200, New Civil Building

SESSION No.6

Corrosion

Room 201, Heshanheng Building

Tsinghua Structural Lab Tour

Conference Banquet

Tsinghua Jiasuo Restaurant

OCT 19 08:30 - 10:00

10:00 - 10:30

10:30 - 12:15

12:15 - 13:30

13:30 - 15:15

15:15 - 15:45

15:45 - 16:15

16:15 - 18:15

SESSION No.7

Composite Joints

Room B200, New Civil Building

SESSION No.8

Fatigue & Fracture

Room 201, Heshanheng Building

Tea & Coffee Break

SESSION No.9

Composite Members

Room B200, New Civil Building

SESSION No.10

Seismic & Dynamic Resistance

Room 201, Heshanheng Building

Lunch

Room B200, New Civil Building

SESSION No.11

Composite Members

Room B200, New Civil Building

SESSION No.12

Seismic & Dynamic Resistance & Application

Room 201, Heshanheng Building

Tea & Coffee Break

Closing Ceremony

Room 100, New Civil Building

IIW XV-E Committee Meeting

OCT 20 09:00 - 12:00

Technical Tour

- The aspect ratio of the screen in Rooms 100 and B200, New Civil Building is 16:9, while that in Room 201, Heshanheng Building is 4:3.
- The shuttle bus service is provided for hotel residents living in the Beijing Xijiao Hotel. For hotel residents in Tsinghua Ziqing Hotel (former Uniscenter Hotel), Tsinghua Jiasuo Hotel, and Beijing Wenjin International Hotel, there will be student helpers to guide the guests to the venue.
- Conference participants may enter the Tsinghua University through the **Main Gate (Southeast Gate) / East Gate / South Gate**. Please bring along your passport / ID card for verification to enter the Tsinghua campus. The conference participants are free to enter the campus from Oct 16 to Oct 20.
- The event photos can be downloaded from the website.
- If you encounter any difficulties, you may contact:
+86 13521466817 Dr. Li
+86 15050582123 Dr. Tian
+86 18845770492 Mr. Lai



ISTS 18 Website



ISTS 18 E-mail



Event Photos



Wechat Group

► VENUE LOCATION



Conference Venue

New Civil Building & Heshanheng Building

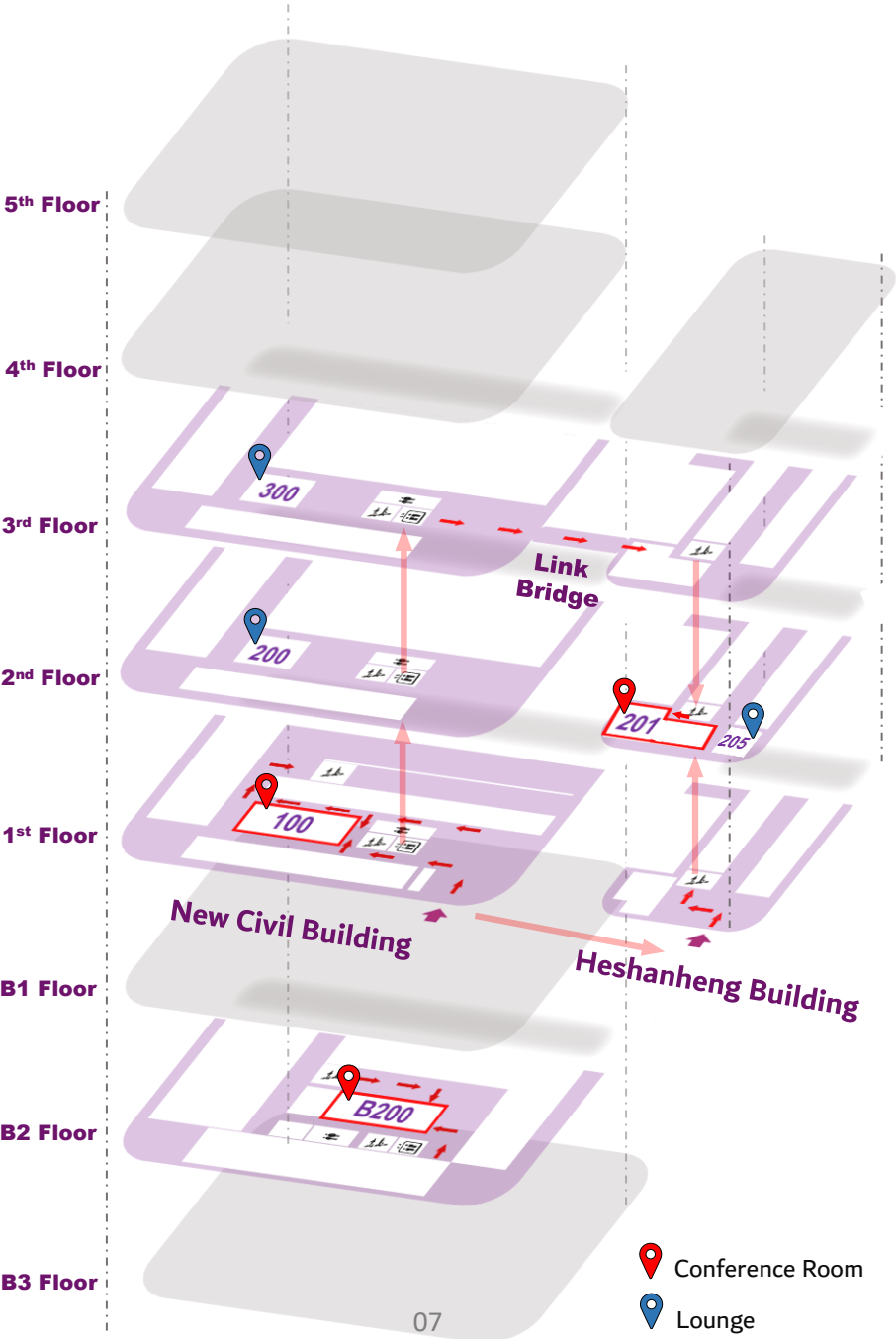
Tsinghua University, Haidian District

Beijing 100084, China



Venue Address

CIVIL BUILDINGS MAP



➡ TRANSPORT GUIDE

■ Shuttle Bus Service

Date	Location	Destination	Departure time
Oct 17	Beijing Xijiao Hotel	New Civil Building	18:00
	New Civil Building	Beijing Xijiao Hotel	21:00
Oct 18	Beijing Xijiao Hotel	New Civil Building	07:40
	Jiasuo Restaurant	Beijing Xijiao Hotel	21:00
Oct 19	Beijing Xijiao Hotel	New Civil Building	07:50
	New Civil Building	Beijing Xijiao Hotel	17:00
Oct 20	New Civil Building	Big Air Shougang	09:00
	Big Air Shougang	New Civil Building	11:00

■ Hotel Pickup

Location	Gathering time	Student Helper
Tsinghua Ziqing Hotel	Oct 18-19 08:00am, Lobby	+86 18810516739 Ms. Chi
Tsinghua Jiasuo Hotel		+86 18868267135 Mr. Wang
Beijing Wenjin International Hotel		+86 19825210036 Mr. Cai

※ If you encounter any transport problem, you may contact +86 18810066038 (Mr. Guan)

► TRANSPORT GUIDE

■ Beijing Capital International Airport

Subway

Capital Airport Line → SanYuanQiao Station (Line 10) → BeiTuCheng Station (Line 8) → OlympicPark Station (Line 15) → TsinghuaDongLuWest Station → 500m walk to East Gate Tsinghua University

Taxi

Around 60mins to the East Gate of Tsinghua University

■ Beijing Daxing International Airport

Subway

Daxing Airport Line → CaoQiao Station (Line 19) → MuDanYuan Station (Line 10) → XiTuCheng Station (Line ChangPing) → LiuDaoKouStation (Line 15) → TsinghuaDongLuWest Station → 500m walk to East Gate Tsinghua University

Taxi

Around 120mins to the East Gate of Tsinghua University

■ Beijingxi Railway Station

Subway

BeijingXi (East Gate) (Line 7) → ZhuShiKou (Line 8) → OlympicPark Station (Line 15) → TsinghuaDongLuWest Station → 500m walk to East Gate Tsinghua University

Taxi

Around 45mins to the East Gate of Tsinghua University

■ Beijingnan Railway Station

Subway

BeijingNan (B2 East Gate) (Line 14) → YongDingMen Station (Line 8) → OlympicPark Station (Line 15) → TsinghuaDongLuWest Station → 500m walk to East Gate Tsinghua University

Taxi

Around 50mins to the East Gate of Tsinghua University

► TECHNICAL TOUR

Big Air Shougang

October 20, 09:00-12:00am

Gathering point: New Civil Building, Tsinghua University

Departure time: 09:00am



Big Air Shougang is a ski jump platform built for the Beijing 2022 Winter Olympics and was the first newly built arena to be finished in the Beijing competition zone on October 31, 2019, less a year after construction began.



The venue is constructed on top of a former steel mill, which was shut down more than 10 years ago. Located in the old Shougang Industrial Park, it is the only snow event venue in downtown Beijing, awaiting freestyle and snowboard big air athletes to jump against the backdrop of coolant towers.

PROGRAMME

PRE-CONFERENCE PROGRAMME OCTOBER 17, 2023 (TUESDAY)

09:00-21:00	REGISTRATION Lobby, New Civil Building
18:30-21:00	WELCOME RECEPTION Room B200, New Civil Building

TECHNICAL PROGRAMME OCTOBER 18, 2023 (WEDNESDAY)

08:00-17:30	REGISTRATION Lobby, New Civil Building	
08:30-08:50	CONFERENCE OPENING CEREMONY Room 100, New Civil Building	
08:50-09:35	KUROBANE LECTURE Chair: J. A. Packer Professor B. Young, The Hong Kong Polytechnic University Hong Kong, China Room 100, New Civil Building	
09:35-10:15	GROUP PHOTO/ TEA & COFFEE BREAK	
TIME	SESSION No.1: Tubular Joints Chairs: B. Young & L. W. Tong Room B200, New Civil Building	SESSION No.2: Additive Manufacturing and Welding Chairs: Y. S. Choo & H. Y. Ban Room 100, New Civil Building
10:15-10:30	Experimental and numerical assessment of stainless steel tubular T-joints sidewall failure mode under chord axial compressive forces <i>M. M. Nogueira, L.R.O. de Lima, A. T. da Silva & B. Young</i>	Local and global stability of metal 3D printed tubular elements <i>L. Gardner, X. Meng, C. Huang & R. Zhang</i>

PROGRAMME

TECHNICAL PROGRAMME OCTOBER 18, 2023 (WEDNESDAY)

10:30-10:45	On the distortional buckling of compressed rectangular hollow section X-joints <i>T. Björk, A. Ahola & O. Kukkonen</i>	A novel sleeve connector for hybrid tubular structures featuring metal 3D printing <i>X. Meng & L. Gardner</i>
10:45-11:00	Chord failure in RHS zero-gap K-joints <i>X. D. Bu & J. A. Packer</i>	A novel computer-aided paradigm for additively manufactured steel tubular joints under the topology optimization <i>W. K. Zuo, M. T. Chen, B. Cheng & J. C. Zhao</i>
11:00-11:15	Collapse behavior of CHS to plate connection under biaxially symmetric load <i>Y. Sato</i>	Finite element study on design of fillet and PJP welds in CHS moment T-connections: application to AISC 360-22 <i>C. C. Zhang, M. Sun & K. Tousignant</i>
11:15-11:30	Effect of material ductility and heat-affected zone on chord face failure of X-joint <i>R. Yan & X. L. Zhao</i>	Stress-strain models for cold-formed steels <i>J. B. Chen, Z. Chen, H. Liu & T. M. Chan</i>
11:30-11:45	Analytical modelling of axially loaded multiplanar RHS XX joints <i>S. Park, C. H. Lee & S. H. Kim</i>	Axial compressive behaviour and design of concrete-filled wire arc additively manufactured steel tubes <i>J. Chen, S. S. Song & J. Ye</i>
11:45-12:00	On the design rules for RHS X joints under brace axial compression or tension <i>J. Wardenier, C. H. Lee, X. Y. Lan & J. A. Packer</i>	Contemporary design of welds in RHS overlapped-k joints for EN 1993-1-8 <i>B. R. W. Newcomb & K. Tousignant</i>

PROGRAMME

TECHNICAL PROGRAMME OCTOBER 18, 2023 (WEDNESDAY)

12:00-13:30	LUNCH Room B200, New Civil Building	
TIME	SESSION No.3: Tubular Joints Chairs: L. Gardner & L. Lima Room B200, New Civil Building	SESSION No.4: High Strength Steel Chairs: S. P. Chiew & X. D. Ji Room 201, Heshanheng Building
13:30-13:45	Experimental investigation and simulation of welding residual stresses in tubular X-joints <i>L. Wang & X. D. Qian</i>	Experimental and numerical investigation of ultimate behavior of high strength steel K gap joints <i>S. H. Kim & C. H. Lee</i>
13:45-14:00	Research on static behavior of unstiffened spatial DKT type steel circular hollow section joints under axial loads <i>F. F. Liao, X. Liu & Y. H. Hu</i>	Experimental investigation for concrete-filled high strength steel hexagonal tubular stub columns under axial compression <i>J. Z. Liu, J. C. Guo, S. Li & T. M. Chan</i>
14:00-14:15	Earthquake resilient prefabricated column foot joint with lateral resistance energy consuming device <i>Z. Q. Jiang, A. L. Zhang, X. F. Yang & X. C. Liu</i>	Mechanical properties of UHPCFST stub columns and confined constitutive model of UHPC <i>Y. B. Wang, C. Song, X. Y. Zhao & Y. Z. Zhao</i>
14:15-14:30	Comparative study of different strengthening methods for CHS K-joints <i>Y. F. Wang, L. W. Tong, Y. N. Mu & X. L. Zhu</i>	Influence of steel grade on the mechanical performance of CFRP-reinforced steel tubular columns under static compression loads <i>L. T. Lee, F. Azhari & A. Heidarpour</i>
14:30-14:45	Experimental and numerical investigations on welded high-strength hollow section joints <i>A. Münch, P. Weidner & T. Ummenhofer</i>	Strain limit of tension-loaded longitudinal plate to tubular X joints fabricated from high strength steel <i>I. H. Ryu, C. H. Lee & S. H. Kim</i>

PROGRAMME

TECHNICAL PROGRAMME OCTOBER 18, 2023 (WEDNESDAY)

14:45-15:00	Loading capacity analysis based on Bayesian regularization BPNN of CHS T/Y-joints reinforced with external stiffeners <i>Y. Wu, X. Q. Liu, Z. Wang & L. Zhu</i>	Testing, numerical modelling and design of S890 and S960 ultra-high strength steel circular hollow section beam-columns <i>Y. J. Wang, A. D. Su & H. Yang</i>
15:00-15:30	TEA & COFFEE BREAK	
TIME	SESSION No.5: Tubular Joints & Members Chairs: Y. Y. Chen & R. Ding Room B200, New Civil Building	SESSION No.6: Corrosion Chairs: C. H. Lee & C. C. Hou Room 201, Heshanheng Building
15:30-15:45	Strength of grade S690 welded steel box columns with partial penetration butt welds <i>S. P. Chiew, P. D. Linz & L. Shen</i>	Corrosion properties and surface morphology of high strength steel wire after 18 years' service <i>X. T. Zhang, T. T. Yan, P. H. Xu & J. Gao</i>
15:45-16:00	Web crippling of cold-formed lean duplex stainless steel tubular sections: simulation and design <i>Y. C. Cai & B. Young</i>	Effect of corrosion on mechanical properties of coupons taken from high strength steel tubes <i>E. Mokhtari, A. Heidarpour & F. Javidan</i>
16:00-16:15	Welding of the hidden toe in partially overlapped RHS K-joints <i>X. D. Bu & J. A. Packer</i>	Multi-scale analysis of tubular structures subjected to earthquake loading in a corrosive environment <i>S. K. Montilla Barrios, Y. Bai, J. Liu, R. A. Picón, M. Elchalakani & J. Flórez-López</i>
16:15-16:30	Tubular structures with negative Poisson's ratio: opportunities and challenges <i>X. Ren, Y. Zhang & X. Y. Zhang</i>	Performance evaluation of CHS T-joints reinforced by welding collar plates under service load <i>Z. W. Li, F. Jing, Z. Y. Meng, T. L. Ren & H. F. Chang</i>

PROGRAMME

TECHNICAL PROGRAMME OCTOBER 18, 2023 (WEDNESDAY)

16:30-16:45	Fire tests of cold-formed austenitic stainless steel rectangular hollow section undergoing web crippling <i>K. J. Zhan, H. T. Li, Z. H. Fan & B. Young</i>	Stability analysis and design methods of corroded steel pipe piles under axial compression <i>X. H. Han, C. Y. Wei, Q. Hu, P. Y. Liu & C. Y. Liu</i>
16:45-17:00	Investigations on cold-formed high strength steel octagonal hollow section columns under compression <i>H. X. Liu, J. Y. Zhu & T. M. Chan</i>	Numerical simulation of corroded circular hollow section steel columns based on the pitting evolution model <i>F. Xu & Y. Zhao</i>
17:00-17:15	Unified analytical modeling of chord plastification in circular hollow section joints <i>S. H. Kim & C. H. Lee</i>	Stress-strain analysis of buried natural gas pipelines with localized corrosion defects under subsidence in mining areas <i>N. T. Liu, Y. C. Yin, Z. G. Ma & H. F. Chang</i>
17:30-18:00	TSINGHUA STRUCTURAL LAB TOUR	
19:00-21:00	CONFERENCE BANQUET Tsinghua Jiasuo Restaurant	

PROGRAMME

TECHNICAL PROGRAMME OCTOBER 19, 2023 (THURSDAY)

TIME	SESSION No.7: Composite Joints Chairs: X. D. Qian & H. W. Tian Room B200, New Civil Building	SESSION No.8: Fatigue and Fracture Chairs: F. C. Wang & D. Y. Ma Room 201, Heshanheng Building
08:30-08:45	Investigations on static strength of fully grouted X-joints under brace axial forces <i>Z. Chen, Y. S. Choo & X. D. Qian</i>	Fatigue strength of welded thin-walled hollow section joints made of lean duplex steel <i>A. Ahola, J. Savolainen, L. Brask & T. Björk</i>
08:45-09:00	Behaviour of blind-bolted CFST chord to CHS brace demountable K-joints <i>C. Hou, Z. B. Yu & J. H. Peng</i>	Fatigue of trusses with welded K-joints made of thick-walled circular hollow sections <i>A. Dürr, S. Bove, U. Kuhlmann, J. Rotha & W. Knecht</i>
09:00-09:15	Study of large demountable shear connectors using push-out tests <i>E. L. Tan, J. Fabiano & G. Pope</i>	Fatigue tests of external inclined strut welded joints of wide-flanged composite box girder bridge <i>K. X. Miao, Y. Q. Liu & X. Q. Xu</i>
09:15-09:30	Static strength of double-skin grouted X-joints under brace axial forces <i>Y. F. Wah, Y. S. Choo, X. D. Qian, Z. Chen & W. Shen</i>	Digital twin solution for crack assessment in X-joints under brace loading <i>E. W. W. Cheok & X. D. Qian</i>
09:30-09:45	Stress concentration factor in concrete-filled steel tubular K-joints under axial loading and in-plane bending <i>I. A. Musas</i>	Formulae for hot spot stress concentration factor distribution of CFST T/Y-joints <i>J. M. Zhao, X. Wei & Z. Wen</i>

PROGRAMME

TECHNICAL PROGRAMME OCTOBER 19, 2023 (THURSDAY)

09:45-10:00	Study on the application of CFRP sheets in strengthening CHS joints of the sports stadium T. T Wang, L. W. Tong, X. M. Xu, F. Gao, W. Z. Shi, F. Zhou, W. F. Jin & B. Yan	Hot spot stress analysis of stiffened welded tubular K-joints under complex loading: experimental and finite element investigation Y. Chen, F. Zhou, W. Wang & T. Bao
10:00-10:30	TEA & COFFEE BREAK	
TIME	SESSION No.9: Composite Members Chairs: T. M. Chan & W. J. Li Room B200, New Civil Building	SESSION No.10: Seismic and Dynamic Resistance Chairs: M. X. Tao & Z. Cheng Room 201, Heshanheng Building
10:30-10:45	Experimental investigation of stainless-clad bimetallic steel CHS T- and K-joints Y. Yang & F. Gao	Case study of underwater explosion to submarine pipeline with different explosion conditions and internal pressure S. M. Li & F. C. Wang
10:45-11:00	Experimental and numerical analysis on rectangular concrete-filled steel tubular columns with T-shaped stiffeners under eccentric compression J. H. Luo, F. Ding, Y. Liu, Z. C. Han & S. Y. Gao	Experimental study on the cyclic performance of the hexagonal UHPC filled double skin steel tubular L. Shen, B. Yang, D. F. Wang & M. H. Liu
11:00-11:15	Axial compression performance of circular hollow steel-reinforced concrete columns Q. X. Ren, Q. Y. Wei, Q. H. Wang, F. Shan & D. Wei	Corrugated sandwich cylindrical tubes subjected to transverse impact L. Zheng, F. Q Li & W. D. Wang

PROGRAMME

TECHNICAL PROGRAMME OCTOBER 19, 2023 (THURSDAY)

11:15-11:30	Square high-strength concrete-filled steel tube columns with additional confinement: seismic performance and design method H. S. Hu, Y. Y. Tan & L. Xu	An experimental study on precast concrete beam to concrete-encased concrete-filled steel tube column connections under cyclic loading Y. X. Ma & K. H. Tan
11:30-11:45	Analytical behavior and bearing capacity analysis on tapered CFDST members under combined loads J. T. Wang, X. H. Liu & Q. Sun	Numerical investigation on cyclic behaviour of concrete-filled double skin steel tubular columns J. H. Fan, W. D. Wang & Y. L. Shi
11:45-12:00	Ultimate compressive strength prediction of CFDST columns through machine learning methods C. H. Yeong & W. Li	Numerical investigation on the impact responses of square concrete-filled steel tubular members after fire S. H. Ji, W. D. Wang & W. Xian
12:00-12:15	Ultimate capacity and buckling analysis of UHTCC-encased steel tubular column under axial compressive load Y. L. Chen, J. Z. Tong, Q. H. Li & S. L. Xu	Experimental investigation on externally-retrofitted concrete-filled steel tubular square column under cyclic lateral loading P. Kar, K. D. Singh & A. C. Borsaiki
12:15-13:30	LUNCH Room B200, New Civil Building	

PROGRAMME

TECHNICAL PROGRAMME OCTOBER 19, 2023 (THURSDAY)

TIME	SESSION No.11: Composite Members Chairs: A. Heidarpour & H. Yang Room B200, New Civil Building	SESSION No.12: Seismic and Dynamic Resistance & Application Chairs: X. L. Zhao & C. Hou Room 201, Heshanheng Building
13:30-13:45	Numerical analysis of spirally reinforced high-strength circular CFST columns under eccentric compression W. J. Li & W. Li	Seismic performance of special-shaped hexagonal concrete filled steel tubes with inner diaphragm plates and shear studs R. Ding, & B. X. Wang
13:45-14:00	Finite element analysis of reinforced hollow high strength concrete filled square steel tube medium and long columns under axial compression Z. J. Yang & W. Z. Cui	Strengthening of wellhead platform, Bohai bay M. L. Kyaw, F. Wang, C. T. E. Lim & Z. H. Ruan
14:00-14:15	Tests on flexural behaviour of rectangular double-opening concrete filled sandwich steel tube (DCFSST) beams Y. F. Yang, X. Y. Wang, Y. Q. Zhang & F. Fu	Life-cycle based structural behaviour of long-span CFST hybrid arch bridge: a study on arch of Pingnan third bridge B. W. Chen
14:15-14:30	On the buckling of dented mechanically lined pipe under bending L. Yuan & J. Zhou	Out-of-plane flexural hysteretic performance comparison between traditional RHS X-connections and novel eccentric RHS X-connections S. Q. Zhong & B. D. Zhao
14:30-14:45	Study on interface behaviour in concrete filled steel tubes based on different modelling methods T. Y. Song, C. H. Wang & K. Xiang	Seismic performance of CFST KK-joint: experiments and numerical analysis L. H. Lai, L. F. Xu & W. Li

PROGRAMME

TECHNICAL PROGRAMME OCTOBER 19, 2023 (THURSDAY)

14:45-15:00	Compressive performance of concrete-filled steel tubular adapter (CFSTA) for wind turbine hybrid towers W. Ren, X. H. Zhou, R. Deng, Y. H. Wang & F. Cao	Seismic performance of endplate connections between steel beams and multi-cavity concrete-filled steel tubular composite walls by blind bolts H. W. Hou, W. Wang & Y. Y. Chen
15:00-15:15	Design and research of stiffened steel-concrete composite tubular columns for offshore wind turbine tower under axial compression K. Y. Jin, Y. H. Wang, X. H. Zhou, H. Wen & R. F. Li	Design of the pre-stressed concrete-filled steel tubular lattice wind turbine tower C. Hu, Y. H. Wang, X. H. Zhou, K. Wang, Y. Zhou & Y. S. Lan
15:15-15:45	TEA & COFFEE BREAK	
15:45-16:15	CLOSING CEREMONY Room 100, New Civil Building	
16:15-18:15	IIW XV-E COMMITTEE MEETING	

TECHNICAL PROGRAMME OCTOBER 20, 2023 (FRIDAY)

09:00-12:00	TECHNICAL TOUR Big Air Shougang
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TSINGHUA CAMPUS & MUSEUMS



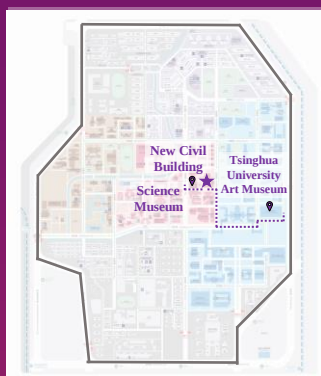
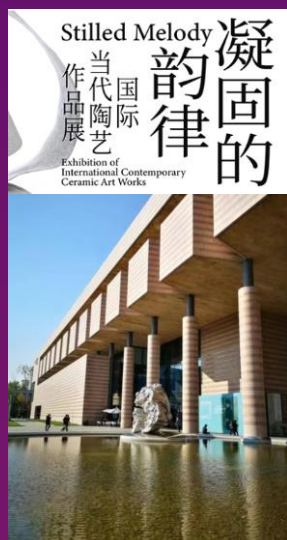
Science Museum (in development)

As the first comprehensive university museum devoted to scientific collections in China, it presents scientific objects and high-tech interactive exhibitions to reproduce the great scientific discoveries and technological inventions in the history of science and technology.

Ticket Price: free

Opening Hours: Oct 18, 09:30-18:30
Oct 19, 09:30-17:30

The campus of Tsinghua University is situated in northwest Beijing on the site of the former imperial gardens of the Qing Dynasty, and surrounded by a number of historical sites.



Art Museum

The building of Tsinghua University Art Museum is designed by the internationally recognized architect Mario Botta, and houses more than thirteen thousands collections of six broad categories which are painting and calligraphy, porcelain, embroidery, furniture, bronze and comprehensive art works.

Ticket Price: RMB 50~120

Opening Hours: 09:00-17:30