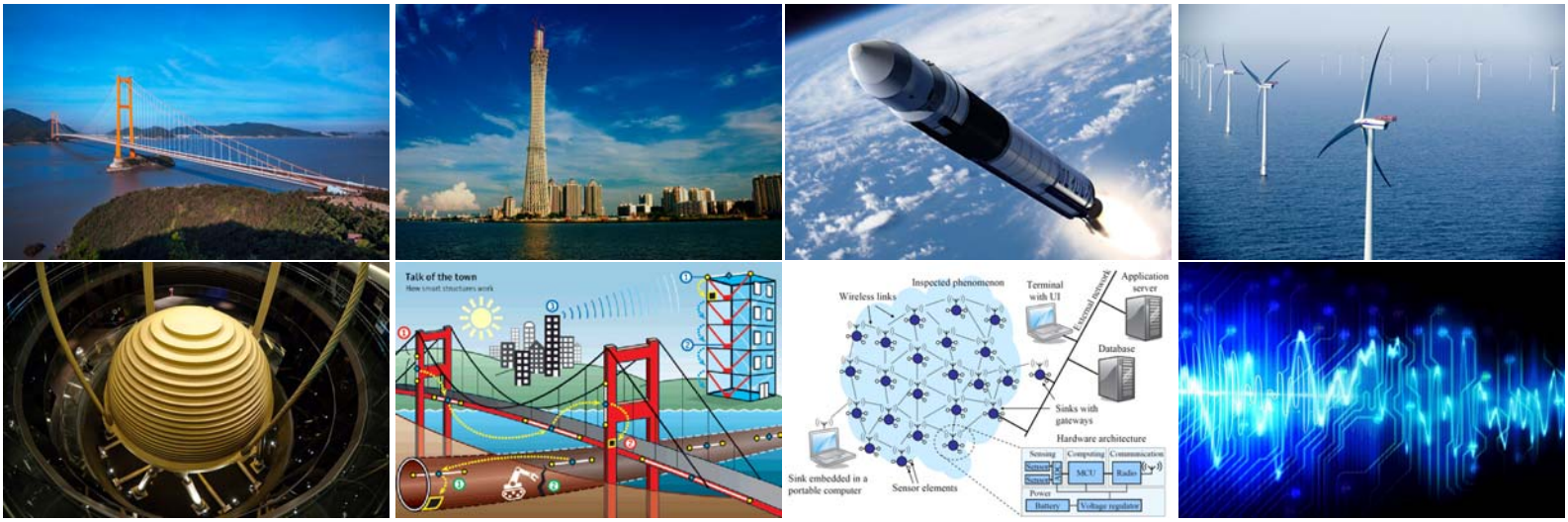
Second Announcement

7WCSCM

The 7th World Conference on Structural Control and Monitoring

Qingdao, China, July 22-25, 2018



Host: The International Association for Structural Control and Monitoring (IASCM)

Sponsor: Harbin Institute of Technology
Committee of Structural Control and Monitoring, CSVE

Co-sponsor: Qingdao University of Technology
BRIDGE Magazine

Conference website: http://www.7wcscm.com

The World Conference on Structural Control and Monitoring (WCSCM) is a premier leading conference, under the auspices of the International Association for Structural Control and Monitoring (IASCM). The WCSCM, held every four years, is aiming at promoting advanced structural control and monitoring technology for a variety of civil, mechanical, aerospace and energy systems. The precedent conferences have been held in Pasadena - USA (1994), Kyoto - Japan (1998), Como - Italy (2002), La Jolla - USA (2006), Tokyo - Japan (2010) and Barcelona - Spain (2014).

The new edition of the WCSCM, 7WCSCM, will be organized by Harbin Institute of Technology in July 2018. The conference will provide international research community a platform to contribute to the state of the art in such multidisciplinary scientific and engineering environment with new results, fresh ideas and future perspectives.

Qingdao, the hosting city of 7WCSCM, is one of most charming cities along the east coast of China. The mild climate, the beautiful sea beach, and Mount Laoshan make Qingdao City a popular health and holiday resort, particularly in summer, for visitors to sightsee and escape the summer heat.

On behalf of the IASCM and the conference organizing committee, I warmly invite you to join the 7WCSCM.

We look forward to meeting with you in Qingdao in July 2018.

Hui Li
Chair of 7WCSCM, 2018
Changjiang Scholarship Professor
Professor of School of Civil Engineering
Harbin Institute of Technology, China

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Conference Themes

Structural Control

- Feedback active, semi-active vibration control
- Passive vibration control
- Theoretical and algorithmic developments in feedback control
- Fault tolerant control

- Wireless control schemes
- Large scale systems and feedback architectures
- Control, models and numerical strategies for hybrid testing.
- Models and system identification
- Integration of structural monitoring and control
- Damping and base isolation systems

Structural Health Monitoring

- Monitoring principles: mechanical, acoustic, electrical, and others
- Wireless sensor and sensor networks
- Sensors systems: piezoelectric, fiber optics, electromagnetic, MEMS, and others
- Structural damage identification
- Signal processing, data mining and fusion, sensor fault detection and recovery
- Computer vision-based monitoring and signal processing
- Machine learning and deep learning
- Artificial intelligence
- Condition assessment, safety evaluation, reliability and life-cycle performance-based design
- Implementations of SHM, design guidelines and codes of SHM

Smart Structure and Systems

- New sensors, actuators and devices
- Smart materials
- Physical and semi-physical models
- Energy harvesting
- Self-healing materials and structures
- Self-adaptive structures
- Bio-inspired systems

Nondestructive Examination (NDE)

- Phased array, time of flight diffraction
- Ultrasonic testing
- Guided wave inspection
- Laser-based NDE
- Optical testing
- Visual and image
- Acoustic emission
- Robots and pilotless
- Virtual reality
- Novel and non-traditional NDE techniques and applications

Applications

- Benchmark problems of structural control and SHM
- Bridges
- Buildings
- Marine structures

- Aerospace and aeronautic structures
- Civil infrastructure systems and historical structures
- Robotic and mechanical structures
- Wind energy systems
- Applications of NDE

Special Session

- SS01: Recent research advances on structural control and health monitoring in Australia
- SS02: Research advances in SHM: Chinese experiences
- SS03: Application, research and design on structural control in Japan
- SS04: New development of smart devices for structural control
- SS05: Structural control of bridges under earthquake or multiple hazards
- SS06: Seismic isolation in civil engineering
- SS07: Application and testing of new materials and techniques in semi-active vibration control
- SS08: Flow controls for wind and structural engineering
- SS09: Wind effects and wind-induced vibration control for large-scale structures
- SS10: Recent advances in hybrid simulation and real time hybrid simulation
- SS11: Development and applications of hybrid testing methods
- SS12: Structural monitoring and control of high-speed railway
- SS13: Structural control and monitoring of wind turbine structures
- SS14: Recent advances in sensing technology for structural health monitoring
- SS15: Infrastructure inspection using unmanned aerial and ground vehicles
- SS16: Innovations in computer vision for structural monitoring and damage detection
- SS17: Computer vision-based sensing and system identification
- SS18: Computer vision-based structural health monitoring
- SS19: Structural health monitoring with multi-data
- SS20: Bayesian inference and uncertainty quantification in structural health monitoring: new algorithms and applications
- SS21: Sparse recovery technique in SHM
- SS22: Uncertainty-involved structural model updating, damage assessment and reliability evaluation
- SS23: Vehicle-bridge interaction and its applications in bridge-weigh-in-motion (BWIM), damage detection, and bridge management
- SS24: Inspection & monitoring for risk control and robust maintenance of urban pipelines network system
- SS25: Practical estimation of structural displacement and its applications
- SS26: Monitoring-based performance assessment of infrastructure
- SS27: Monitoring-based life cycle assessment of infrastructures
- SS28: Monitoring-based bridge condition assessment and safety warning
- SS29: Innovative technologies for system integration, SHM application, and structural performance assessment
- SS30: Understanding, mitigating, and utilizing human induced structural responses
- SS31: Application of structural health monitoring techniques
- SS32: Smart and multifunctional concrete

- SS33: Strain-based structural health monitoring: new developments and applications
- SS34: Dense arrays of sensors, distributed and quasi-distributed sensors, and associated data analysis and management
- SS35: Innovative developments in structural system identification
- SS36: Highway Infrastructure Monitoring
- SS37: Recent Development and Future Trend for Research and Application of Structural Control in China
- SS38: Structural Health Monitoring of Long-span Bridges

Keynote Speakers

Prof. Charles R. Farrar
Los Alamos National Laboratory, USA

Prof. James L. Beck
California Institute of Technology, USA

Prof. Yozo Fujino
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University of Southern California, USA

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University of Exeter, UK

Prof. Satish Nagarajaiah
Rice University, USA

Prof. Hyung-Jo Jung
Korea Advanced Institute of Science and Technology, Korea

Prof. You-Lin Xu
The Hong Kong Polytechnic University, Hong Kong, China

Important Dates

Special session proposal deadline	April 30, 2017
Abstract submission deadline	October 31, 2017
Acceptance/rejection notice	November 30, 2017
Full paper submission deadline	**April 30, 2018 (Extended)**
Early bird registration deadline	April 30, 2018
Conference date	July 22-25, 2018

Registration Fee

	Early (by April 30, 2018)	Late
Delegate	600 USD	650 USD
Student	260 USD	300 USD
Accompany	260 USD	300 USD

The registration fee will include:

- A conference proceeding.
- Attendance to all scientific sessions.
- Access to coffee breaks, lunches, dinners and banquet.
- Technical tour.

Language

English.

Paper Submission/ Conference Registration/ Hotel Reservation

http://www.7wcscm.com

Venue

The 7WCSCM will be held in the Shangri-La hotel located in Qingdao city of China. Qingdao city is situated on the Jiaozhou bay, southern-east tip of Shandong Peninsula, East China. It is an important economic center and coastal city of China, which is famous for its historical and cultural heritages and tourism industry.

From Qingdao to:

Beijing: 1hr 10mins by airplane / 5hrs by high-speed railway train

Shanghai: 1hr 20mins by airplane / 6hrs by high-speed railway train

Hongkong: 3hrs 10mins by airplane

Jinan: 2.5hrs by high-speed railway train

The Shangri-La Hotel in Qingdao is located in the city's business center, close to the financial and government district. The hotel is within walk distance to coastline and other popular tourist attractions.

Technical Visit

1. **Shandong High-speed Jiaozhou Bay Bridge**

   The Shandong High-speed Jiaozhou Bay Bridge is totally 41.58 kilometers long, among which the over-water length is 28.88 km. The Bridge consists of the Cangkou Channel Bridge (five-span continuous cable-stayed bridge with the steel box girder and double cable planes), the Hongdao Channel Bridge (two-span continuous cable-stayed bridge with the steel box girder and double cable planes), the Dagu Channel Bridge (single-tower self-anchored suspension bridge), the bridge with non-navigable spans, the land-based approach bridges, and the interchange overpasses. n the 30th International Bridge Conference in 2013, the bridge was awarded the "George • Richardson Prize", which was the highest international prize awarded to Chinese bridge project at that time. In 2012, the bridge appeared in the Guinness world record for the longest cross-sea bridge and

Forbes title of "the Greatest Bridge Globally".

2. **Qingdao Jiaodong International Airport**

   The plan layout of Qingdao Jiaodong International Airport terminal is in the shape of a starfish and it is composed of five centripetal airside concourses named A, B, C, D, E and one departure lounge named F. The total construction area of the terminal is approximately 478,000 square meters, the eaves height of landside viaduct is 32.15 meters while the airside is 23.85 meters and the top of the roof is 12 meters. There are three lines of high-speed railway and one line of subway which are all 20 meters underground, passing through the central departure lounge of F and going through the east of airside concourse of E.

   Cast-in-place reinforced concrete frame structure is adopted in substructure of the terminal, and multi-group viscous dampers are installed in the departure lounge of F. The post tensioning bonded prestressed beam floor system is used in the departure lounge of F while unbonded prestressed tendons are used in partial floorslabs. The steel grid structure system is adopted in long-span roof and the supporting columns are made of steel tube columns and/or concrete filled steel tubular columns. The design life of the terminal is 50 years and the classification for seismic-resistant buildings is the key fortification class (short for class B). The roof steel structures, vertical members, transfer members, foundations and key nodes are in the level one of the safety classes of building structures while the other components are in the level two. The grade of foundation design is in grade A. This project is located in the six-degree fortification area, and the seismic fortification is designed in seven-degree and third seismic design classification. 50-years wind pressure (w0=0.60kN/m2) is considered in the concrete structure while the steel roof is 100-years wind pressure (w0=0.70kN/m2). The surface roughness is considered in class B and other wind load parameters (shape coefficient, wind vibration coefficient etc.) are according to the results of wind tunnel tests.

Contact

Abstract/ Paper Submission

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Registration/Exhibits/Sponsors

We are looking for sponsors to organize an exciting conference with us together. We offer an excellent opportunity for your company or institution to present your products and knowledge to the wide community of structural control and health monitoring. For further details, please contact:

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