

The 3rd International Bridge Seismic Workshop



**Seattle, Washington USA
October 1-4, 2019**

3rd International Bridge Seismic Workshop

Workshop Venue:

Husky Union Building (HUB) at University of Washington

HUB Address: 4001 E Stevens Way NE. Seattle, WA 98195

<https://hub.washington.edu>

Technical Program

October 2, 2019 (Wednesday)			
Time	Presenting Title & Presenter	Co-Chairs/ Moderators	
07:00 - 08:30	<i>Breakfast</i>		
08:30 - 08:50	<p>Opening Ceremony</p> <p><i>Welcome and Opening Remarks by Conference Chair</i></p> <p><i>Opening Remarks by Organizing Committee Co-Chairs</i></p>	Phillip Yen	
08:50 - 12:10	<p><u>Plenary Session 1 (Keynote Lectures)</u></p> <p>Meeting Room – HUB 250</p> <ul style="list-style-type: none"> • Re-Visiting Earthquake Resistant Design of Bridges – Prof. Gian Michele Calvi Professor of the IUSS Pavia, Italy, and Adjunct Professor at the North Carolina State University. • Seismic Design Requirements and Construction Challenges of Lifeline Essential and Critical Bridges – Bijan Khaleghi, PhD, PE, SE State Bridge Design Engineer, Washington State Department of Transportation <p>-----Break----- 15 minutes (@HUB #250)</p> <ul style="list-style-type: none"> • Seismic Damage Mechanism and Control of Long-Span Bridges – Prof. Jianzhong Li, Ph.D. Deputy Dean of the college of civil engineering of Tongji University and the Director of Tongji's Multi-Functional Shake Table at Jiading Campus, Shanghai, China. • State DOT Seismic Resiliency Assessment Process and Mitigation Program – Bruce Johnson, PE, SE, Former State Bridge Engineer, Bridge Engineering Section, Oregon Department of Transportation 	TBD	
12:10 - 13:30	Lunch (@ HUB #334 & HUB #332)		
13:30 - 17:30	<p><u>Concurrent Session IA - Seismic Design Track</u> Meeting Room Number: HUB 214</p> <ul style="list-style-type: none"> • Smart shear keys to prevent bridge girders from falling off during earthquakes and tsunami – Genda Chen, Missouri University of Science and Technology, Rolla, MO, USA • Connections for resisting longitudinal seismic loads in bridges made with pretensioned concrete girders – John Stanton, Univ. of Washington, Seattle, WA, USA • Effect of design details on seismic response of RC bridge 	TBD	

	<p><i>columns under long duration ground motions</i> – Mohamed A. Moustafa, Univ. of Nevada, Reno, NV, USA</p> <p>-----Break----- 20 minutes (@ HUB #214)</p> <ul style="list-style-type: none"> • Longitudinal deck joints between concrete girders made using UHPC – Paolo Calvi / John Stanton, Univ. of Washington, Seattle, WA, USA • The seismic design of SR99 Tunnel in Washington State, - Yang Jiang, Bridge & Tunnel Group, HNTB, WA, USA • Shaking table tests of RC columns with a low-cost sliding pendulum system under bi-directional excitations - Mitsuyoshi Akiyama, Waseda University, Tokyo Japan • Performance-based seismic design and evaluation of steel eccentrically braced frames with tubular links as bridge bents – Sharlie Huffman, Hatch-Vancouver, BC, Canada 		
<p>13:30 – 17:30</p>	<p><u>Concurrent Session IB - Seismic Analysis/ Assessment</u> Meeting Room Number: HUB 340</p> <ul style="list-style-type: none"> • Optimal Decision-Making for Improving Bridge Resilience - Jerry Shen, FHWA Bridge and Structures Office, Washington, DC, USA • Shaking table test study on collision effect of small radius curve bridge under near-fault ground motion - Chiyu Jiao, Beijing Urban Transportation Infrastructure Engineering Technology Research Center, Beijing China • Statistical Framework to Simulate Site-Based Ground Motions for Seismic Analysis of Bridge Structures – Farzin Zareian, Univ. of California, Irvine CA, USA <p>-----Break----- 20 minutes (@HUB #214)</p> <ul style="list-style-type: none"> • Seismic design of a long-span continuous steel truss bridge – Yan (Helen) Xu, Tongji University, Shanghai, China • Seismic Assessment of Concrete Balanced-System Bridges- Daniele Malomo Modelling and Structural Analysis Konsulting (Mosayk Ltd), Pavia, Italy • Development of the dead weight compensation system to improve the anti-catastrophe performance of a viaduct – Akihiro Toyooka , Railway Technical Research Institute, Japan • A New Seismic Design Method of Simply Supported Girder Bridges for Very Rare Ground Motions in the Transverse Direction - Tianbo Peng, Tongji University, Shanghai, China. • Comparative assessment of seismic collapse risk for non-ductile and ductile girder bridges - Libo Chen, Fuzhou University, Fuzhou China. 	<p>TBD</p>	
<p>13:30 – 17:30</p>	<p><u>Concurrent Session IC - Seismic Retrofitting & Ground Motion</u> Meeting Room Number : HUB 337</p> <ul style="list-style-type: none"> • Study on follow-up processing of crossing-fault hualien bridge damaged by the 0206-Hualien-Earthquake 2018 – Yu-Chi Sung, National Taipei University of Technology, Taipei, Taiwan • 3-D ground-motion simulations of magnitude 9 earthquakes on the cascadia subduction zone - Art Frankel, U.S. Geological Survey, Seattle WA USA • Effects of cascadia subduction zone M9 earthquakes on bridges - Marc Eberhard, University of Washington, Seattle, WA USA <p>-----Break----- 20 minutes (@ HUB #214)</p>	<p>TBD</p>	

	<ul style="list-style-type: none"> • Shaking table tests of RC columns with a low-cost sliding pendulum system under bi-directional excitations - Mitsuyoshi Akiyama, Waseda University, Tokyo Japan • Seismic behavior of curved bridge subjected to near-fault ground motions – Shuichi Fujikura, Utsunomiya University, Japan • UHPC jacket retrofitting of reinforced concrete bridge piers with low flexural reinforcements –Teng Tong, Southeast University, Nanjing, China • The effect of ground deformation and strong ground motion on the damage of a continuous curve viaduct damaged by near-fault ground motion - Gakuho Watanabe, Yamaguchi University, Japan. 		
18:00	<u>Adjourned</u>		

Note: An Award Dinner is planned to be held @ 18:30pm – 20:30pm Dinner Place: TBD

October 3, 2019 (Thursday)			
Time	Presenting Titles and Presenters	Co-Chairs/ Moderators	
07:00 -08:30	<i>Breakfast</i>		
08:30 – 12:10	<p><u>Plenary Session II (Keynote Lectures)</u> Meeting Room Number: HUB 250</p> <ul style="list-style-type: none"> • Performance-Based Seismic Design of Bridges - What Is It and How Will It Change Design Practice? – Lee Marsh, PhD PE Deputy Director – America’s Technical Excellence Center, WSP • Capacity- Based Inelastic Displacement Spectra for Reinforced Concrete Bridge Columns Subjected to Far-Field and Near-Fault Ground Motions – Prof Kuo-Chun Chang, A Distinguished Professor of the Department of Civil Engineering of National Taiwan University (NTU), Taipei, Taiwan <p style="text-align: center;">-----Break----- 15 minutes (@ HUB #250)</p> <ul style="list-style-type: none"> • Failure Mechanism of the Furyo Daiichi Bridge in the 2016 Kumamoto Earthquake – Prof. Kenji KOSA, Professor Emeritus, Kyushu Institute of Technology, Kitakyushu, Japan & Technical Advisor, Hanshin Expressway Technology Center, Osaka, Japan • Concrete Filled Steel Tubes for Accelerated Bridge Construction and Enhanced Structural Performance – Prof. Dawn E. Lehman Dept. of Civil Engineering, University of Washington, Seattle, WA, USA • Seattle Waterfront Construction Update – - Angie Brady Deputy Director, Office of the Waterfront and Civic Projects, City Gov. of Seattle, Seattle, WA USA 	TBD	
12:20 – 13:30	Lunch (@HUB # 334 & HUB #340)		
13:30 -17:30	<u>Concurrent Session IIA - Seismic Design</u> Meeting Room Number: HUB 214		

	<ul style="list-style-type: none"> • Advances in vibration-based structural health monitoring of bridges – David Lau/ Serge Desjardins, Ottawa-Carleton Bridge Research Institute, Carleton University, Ottawa Canada. • Effects of prestressed tendon layouts on seismic fragility of precast segmental bridge columns – Yuye Zhang, Nanjing University of Science and Technology, Nanjing China • Hysteretic cyclic testing of self-centering precast segmental RC bridge columns under diagonal loads – Junfeng Jia, Beijing University of Technology, Beijing, China <p>-----Break----- 20 minutes (@ HUB #214)</p> <ul style="list-style-type: none"> • Unilateral cyclic loading tests on repaired 0.2-scale RC column models using strain-hardening fiber-reinforced cement-based composites - Koji Kinoshita, Department of Civil Engineering, Gifu University, Japan • Seismic risk analysis and hybrid simulation for function separation bridge - Ji Dang, Saitama University, Japan • Development of hybrid simulation method and its application on bridges and other infrastructures - Cheng-Yu Yang, Tongji University, Shanghai, China. • Trial design study on earthquake resilient highway bridge with tall piers – Zhehan Cai, Fuzhou University, Fuzhou, China 	TBD	
13:30 -17:30	<p><u>Concurrent Session IIB - Seismic Performance Testing/ Assessment</u> Meeting Room Number: HUB 332</p> <ul style="list-style-type: none"> • Effect of skew on support length demands of bridges with seat-type abutments – Suiwen Wu/ Ian Buckle, University of Nevada, Reno, NV, USA • Testing of a low damage multi-joint rocking pier using the multi-performance design concept– Royce Liu/ Alessandro Palermo, University of Canterbury, Christchurch, NZ • Rapid post-earthquake safety evaluation of a suspension bridge using fragility curves and strong motion data – Roy A. Imbsen, SC Solutions, Carmichael, California, USA <p>-----Break----- 20 minutes (@ HUB #214)</p> <ul style="list-style-type: none"> • Analysis on seismic response of deep-water composite bridge piers considering fluid-structure interaction – QiuHong Zhao, Tianjin University, Tianjin, China • Effect of underground beam on seismic damage of railway rigid frame viaduct - Meguru Onodera, Railway Technical Research Institute, Japan. • Experimental study on seismic behavior of integral abutment-pile-soil under low-cycle pseudo-static test – Fuyun Huang, Fuzhou University, Fuzhou, China 	TBD	
13:30 -17:30	<p><u>Concurrent Session IIC - Seismic Retrofit and Mitigation Measures</u> Meeting Room Number : HUB 337</p> <ul style="list-style-type: none"> • Seismic mitigation and design of single pylon cable-stayed bridge – Qiang Han, Beijing University of Technology, Beijing China • Boeing access road bridge seismic retrofit - Hana D'Acci, Jacobs Engineering, City of Tukwila, Washington, USA. • Strain limits and plastic hinge lengths for displacement-based 	TBD	

	<p><i>seismic design of circular bridge columns - Chad Goodnight, WSP, Seattle, WA USA</i></p> <p>-----Break----- 20 minutes (@ HUB #214)</p> <ul style="list-style-type: none"> • Shaking Table Test of Bridge with Scoured Pile Group subjected to Near Fault Earthquakes – Kuang-Yen Liu, National Chengkung University, Tainan Taiwan. • Bayesian updating based model for the hydrodynamic added mass of the rectangular - Kai Wei, Department of Bridge Engineering, Southwest Jiaotong University, Chengdu, China • Scour stability evaluation of bridge pier considering fluid-solid interaction – Tzu-Kang Lin, National Chiao Tung University, Hsinchu, Taiwan 		
17:30 – 17:50	<p><u>Closing Ceremony</u></p> <p>Announcements</p>	Phillip Yen	

Accommodation Hotel information:

Silver Cloud Hotel - University District
Address: 5036 25th Avenue NE. Seattle, WA 98105
Phone: (206)526-5200

Workshop schedule:

10/01/2019

Arrival and Check in Hotel (Silver Cloud University Hotel)

10/02/2019 Day 1 – 3rd IBSW

8:30 – 12:10 ----- Workshop Opening Ceremony + Plenary Session I
12:10 – 13:30 ----- Lunch
13:30 – 17:50 ----- Concurrent Workshop Session IA, IB & IC
18:30 – 20:30 ----- Award Dinner -TBD

10/03/2019 Day 2 – Workshop

8:30 – 12:20 ----- Workshop Plenary Session II
12:20 – 13:30 ----- Lunch
13:30 – 17:30 ----- Concurrent Sessions IIA, IIB & IIC
17:30 – 18:00 ----- Closing Ceremony

10/04/ 2019 Technical Site Visits

8:30 – 16:30 Box Lunch and shuttle bus provided.