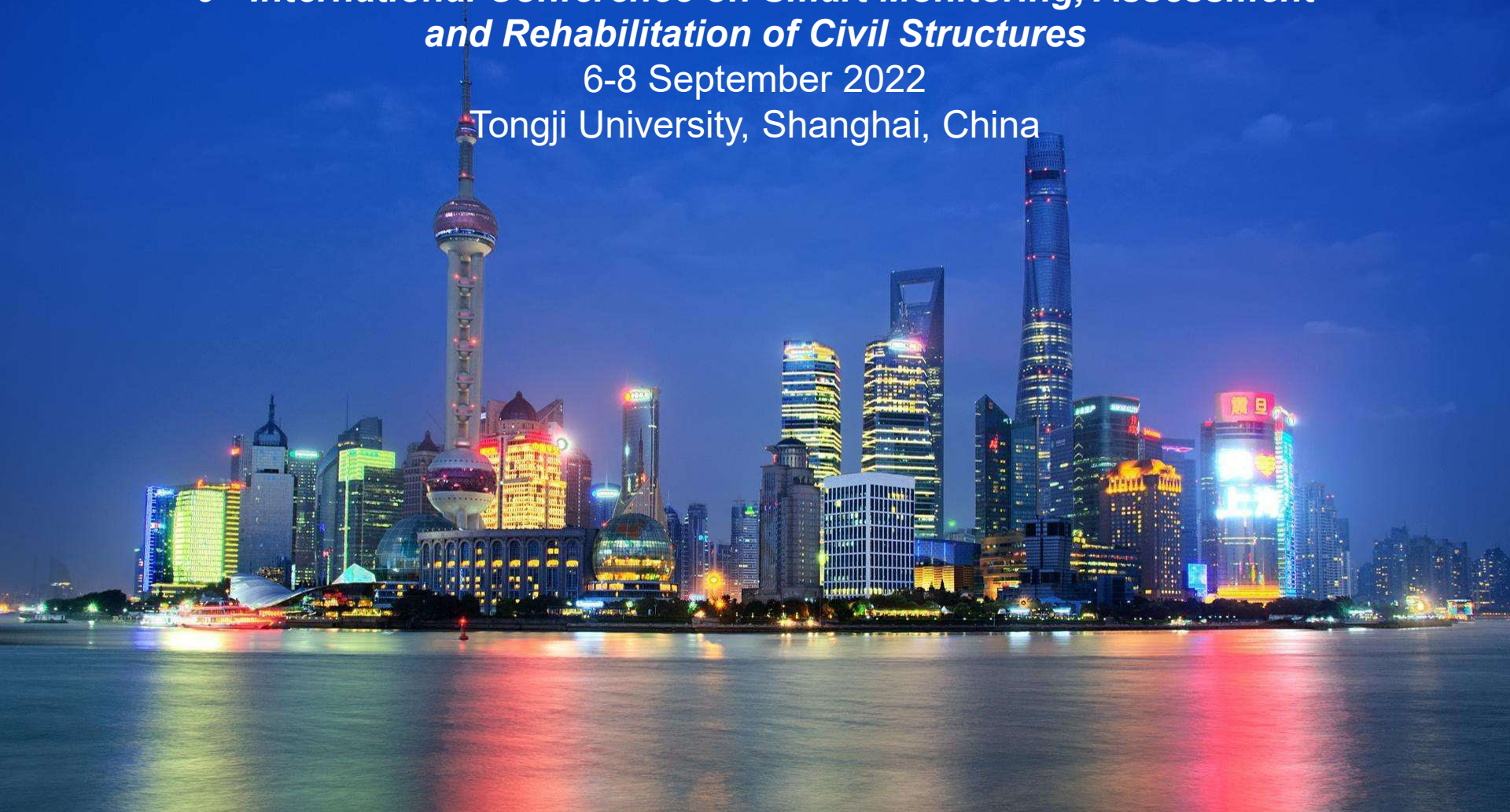


SMAR 2022

*6th International Conference on Smart Monitoring, Assessment
and Rehabilitation of Civil Structures*

6-8 September 2022

Tongji University, Shanghai, China



PROGRAM

PROGRAM

“All given times are in UTC+8. i.e. Shanghai 15:00 = Berlin 9:00 - Istanbul 10:00 - Tokyo 16:00”

6th September, 2022 (Tuesday)

Room 1

Room 2

TIME(UTC+8)

Zoom Meeting ID: 892 526 48808
Passcode: 493480

Zoom Meeting ID: 874 542 46412
Passcode: 897000

15:10-15:40

Opening
Conference Co-Chairs:
Xiang-Lin Gu
Masoud Motavalli
Alper Ilki

15:40-16:15

KEYNOTE LECTURER 01
Prof. Dr. Eleni Chatzi
Associate Professor, Chair of Structural Mechanics, at
the Institute of Structural Engineering, ETH Zürich
Session Chairs: Masoud Motavalli, Alper Ilki

16:15-16:50

KEYNOTE LECTURER 02
Prof. Dr. Xiao Lin Zhao
Chair Professor, The Hong Kong Polytechnic University
Session Chairs: Masoud Motavalli, Alper Ilki

16:50-17:05

Break

17:05-19:00

Special Session –
Monitoring, Assessment and Rehabilitation of
Traditional Masonry and Timber Structures
Session Chairs: Xiaobin Song, Jin Zhang

Special Session –
Moving Load-based Bridge Monitoring and Inspection
Session Chairs: Songye Zhu, Wenyu He

19:00-19:15

Break

19:15-21:55

Session – Performance and Damage Assessment
Session Chairs:
Zhilv Jiang, Chao Jiang

Session – Structural Health Monitoring
Session Chairs:
Li Hong, Mingyu Fan

PROGRAM

“All given times are in UTC+8. i.e. Shanghai 15:00 = Berlin 9:00 - Istanbul 10:00 - Tokyo 16:00”

7th September, 2022 (Wednesday)

Room 1		Room 2	
TIME(UTC+8)	Zoom Meeting ID: 896 469 60306 Passcode: 607808	TIME(UTC+8)	Zoom Meeting ID: 810 552 22752 Passcode: 495064
15:00-15:35	KEYNOTE LECTURER 03 Prof. Dr. Dilum Fernando The University of Edinburgh Session Chairs: Xiang-Lin Gu, Masoud Motavalli		
15:35-16:10	KEYNOTE LECTURER 04 Prof. Dr. Salvador Ivorra Professor, the University of Alicante Session Chairs: Xiang-Lin Gu, Masoud Motavalli		
16:10-16:25	Break	16:10-16:25	Break
16:25-18:50	Special Session - Shape Memory Alloys (SMAs) for Engineering Applications Session Chairs: Moslem Shahverdi, Saim Raza	16:25-18:20	Special Session - Multi-hazard Assessment and Mitigation of Infrastructure Session Chairs: Feng Lin, Qian-Qian Yu
18:50-19:05	Break	18:20-18:35	Break
19:05-20:30	Session - Damage Control, Repair and Strengthening Session Chairs: Ayaho Miyamoto, Cheng Jiang	18:35-20:45	Session - Performance and Damage Assessment Session Chairs: Guangming Chen, Behrouz Shafei
20:30-20:45	Break	20:45-21:00	Break
20:45-22:10	Session - Damage Control, Repair and Strengthening Session Chairs: Tao Chen, Bin Peng	21:00-22:40	Special Session - Environmental Impact on Performance of Concrete Structures Session Chairs: Xiguang Liu, Zheng Dong

PROGRAM

“All given times are in UTC+8. i.e. Shanghai 15:00 = Berlin 9:00 - Istanbul 10:00 - Tokyo 16:00”

8th September, 2022 (Thursday)

	Room 1	Room 2
TIME(UTC+8)	Zoom Meeting ID: 892 567 22906 Passcode: 945514	Zoom Meeting ID: 868 428 20859 Passcode: 266560
15:00-15:35	KEYNOTE LECTURER 05 Prof. Dr. Zhishen Wu Southeast University Session Chairs: Xiang-Lin Gu, Alper Ilki	
15:35-16:10	KEYNOTE LECTURER 06 Dr. Julien Michels re-fer AG Session Chairs: Xiang-Lin Gu, Alper Ilki	
16:10-16:25	Break	
16:25-18:35	Special Session - Life-cycle Assessment and Maintenance of Steel Structures Session Chairs: Pierluigi Colombi, Enzo Martinelli	Special Session - UHPC: from Materials to Structures Session Chairs: Tengfei Xu, Yue Huang
18:35-18:50	Break	
18:50-20:15	Special Session - Life-cycle Assessment and Maintenance of Steel Structures Session Chairs: Elyas Ghafoori, Lili Hu	Special Session - Intelligent Inspection, Monitoring and Assessment of Infrastructures Session Chairs: Jiangpeng Shu, Alfred Strauss
20:15-20:30	Break	
20:30-21:30	Closing and Awards, Announcement of next SMAR Conference	

PROGRAM

6th September

15:10-15:40	OPENING Conference Co-Chairs: Xiang-Lin Gu Masoud Motavalli Alper Ilki
15:40-16:15	KEYNOTE LECTURER 01 SHM REVISITED: THE ROLE OF MODELS FROM FAULT DETECTION AND CHARACTERIZATION TO DECISION SUPPORT Prof. Dr. Eleni Chatzi Associate Professor, Chair of Structural Mechanics, at the Institute of Structural Engineering, ETH Zürich
16:15-16:50	KEYNOTE LECTURER 02 IMPROVING FATIGUE PERFORMANCE OF STEEL MEMBERS AND CONNECTIONS USING CARBON FIBER REINFORCED POLYMER Prof. Dr. Xiao Lin Zhao Chair Professor, The Hong Kong Polytechnic University
16:50-17:05	Break
17:05-19:00	Special Session - MONITORING, ASSESSMENT AND REHABILITATION OF TRADITIONAL MASONRY AND TIMBER STRUCTURES Session Chairs: Xiaobin Song, Jin Zhang
17:05-17:30	EXPERIMENTAL STUDY ON THE LATERAL PERFORMANCE OF COLUMNS IN TRADITIONAL CHINESE TIMBER STRUCTURES <u>Y.J. Wu</u> [*] , H.S. Lin, Q.F. Xie
17:30-17:45	DAMAGE AND TEMPERATURE ANALYSIS OF CLT SCALE COMPARTMENT FIRE TEST <u>Z.Y. Xing</u> , J. Zhang [*] , Y. Bai, Y.M. Sun
17:45-18:00	VARIABLITY ANALYSIS OF ROTATIONAL BEHAVIOR OF BOLTED GLULAM BEAM-TO-COLUMN CONNECTIONS <u>M.Q. Wang</u> , X.L. Gu, X.B. Song [*]
18:00-18:15	EXPERIMENTAL STUDY ON THE SEISMIC PERFORMANCE OF TRADITIONAL TIMBER FRAME WITH WATTLE AND DAUB INFILL <u>R. Xu</u> , Y.Y. Qi, H. Huang [*]

PROGRAM

6th September

17:05-19:00 **Special Session - MONITORING, ASSESSMENT AND REHABILITATION OF TRADITIONAL MASONRY AND TIMBER STRUCTURES**
Session Chairs: Xiaobin Song, Jin Zhang

18:15-18:30 **DISTRIBUTION OF WOOD RESIDUAL STRAIN AROUND HOLES DUE TO DRILLING**
J.Y. Tang, X.B. Song*, Y. Guo, Y.K. Song

18:30-18:45 **CASE STUDY OF RELIABILITY ASSESSMENT OF HISTORICAL WOODEN COMPOSITE STRUCTURES**
N. Abbas, Y.W. Ding, H.B. Xiong*, and J.Y. Sun

18:45-19:15 **Break**

17:05-19:00 **Special Session - MOVING LOAD-BASED BRIDGE MONITORING AND INSPECTION**
Session Chairs: Songye Zhu, Wenyu He

17:05-17:30 **MODE SHAPE IDENTIFICATION BASED ON INSTANTANEOUS FREQUENCY OF MOVING VEHICLE-BRIDGE SYSTEM (invited)**
Y. Li, W.Y. He*, W.X. Ren

17:30-17:45 **DAMAGE DETECTION IN BEAM STRUCTURES BASED ON MULTIPLE TYPES OF INFLUENCE LINES**
Q.L. Cai, S. Zhu*

17:45-18:00 **STATISTICAL BRIDGE INFLUENCE LINE IDENTIFICATION METHOD USING BAYESIAN REGULARIZATION**
Z.W. Chen*, L. Zhao, W.J. Yan

18:00-18:15 **ADVANCED ADAPTIVE SIGNAL DECOMPOSITION TECHNIQUES FOR DRIVE-BY BRIDGE MODAL IDENTIFICATION**
J.T. Li*

18:15-18:30 **ANALYSIS OF VEHICLE-BRIDGE INTERACTION USING ADVANCED VEHICLE MODEL**
J.P. Yang*, T.Y. Feng

PROGRAM

6th September

17:05-19:00 **Special Session - MOVING LOAD-BASED BRIDGE MONITORING AND INSPECTION**
Session Chairs: Songye Zhu, Wenyu He

18:30-18:45 **STOCHASTIC DYNAMIC LOAD IDENTIFICATION A DYNAMICAL SYSTEM WITH CORRELATED RANDOM PARAMETERS**
S.Q. Wu^{*}, Y.W. Sun

18:45-19:00 **HIGH RESOLUTION MODE SHAPES IDENTIFICATION OF BRIDGE USING LIMITED SENSORS**
Z. Nie, G. Xia, H. Ma^{*}

19:00-19:15 **Break**

19:15-21:55 **Session - PERFORMANCE AND DAMAGE ASSESSMENT**
Session Chairs: Zhilv Jiang, Chao Jiang

19:15-19:40 **ACCELERATED NON-UNIFORM CORROSION TEST METHOD, CORROSION CRACKING MODE AND BOND PERFORMANCE DEGRADATION OF REINFORCED CONCRETE (invited)**
C. Fu^{*}, J. Huang, D. Fang

19:40-19:55 **SUSTAINABLE DESIGN OPTIMIZATION FOR WIRE ARC ADDITIVE MANUFACTURING OF STRUCTURES**
M.H. Baqershahi^{*}, F.V. Keulen, C. Ays, E. Ghafoori

19:55-20:10 **IMPACT OF TRUCK PLATOONING ON BRIDGES' BRAKING FORCES**
M. Breveglieri^{*}, M. Sjaarda, A. Nussbaumer, G. Feltrin

20:10-20:25 **RELIABILITY STUDY ON SIMPLY SUPPORTED PURLINS WITH SHEETING UNDER TYPHOON HAZARDS**
F. Bai, L. Dai^{*}

20:25-20:40 **IMPROVING DAMAGE IDENTIFICATION RELIABILITY BY COMBINING CLASSIFICATION ON DISTINCT FEATURE SPACES**
A. Barontini^{*}, M.G. Masciotta, P. Amado-Mendes, L.F. Ramos, P.B. Lourenço

PROGRAM

6th September

19:15-21:55 **Session - PERFORMANCE AND DAMAGE ASSESSMENT**
Session Chairs: Chuanqing Fu, Mohammad Hassan Baqershahi

20:40-20:55 **EXPERIMENTAL STUDY ON THE MACRO AND MICRO CHARACTERISTICS OF SAND-GROUT MIXTURE FORMED BY PRESSURE CEMENT GROUTING IN SOILS**
W. Chu, Y. Hua, W. Zhai, D. Zhang*, J. Yan

20:55-21:10 **NUMERICAL STUDY ON REBOUND CHARACTERISTICS AND DAMAGE MECHANISM OF SPHERICAL MULTI-PARTICULATE IMPACT STEEL**
J. Di*, L. He, K.X. Zhang, G.F. Chen

21:10-21:25 **NUMERICAL STUDY ON FATIGUE BEHAVIOR OF GROUTED CONNECTION IN OFFSHORE WIND TURBINE UNDER AXIAL LOAD**
T. Lei*, Q. Fang, T. Chen, G. Yuan, K. Chen

21:25-21:40 **NUMERICAL SIMULATION ON INFILLED FRAME STRUCTURES AND APPLICATIONS OF MACHINE LEARNING**
T. Zhou, Q.Q. Yu, X.L. Gu*

21:40-21:55 **NEAR-CRACK DEBONDING IN AN FRP-OVERLAID STEEL PLATE**
B.T. Zheng, J.G. Teng*

19:15-21:55 **Session - STRUCTURAL HEALTH MONITORING**
Session Chairs: Li Hong, Mingyu Fan

19:15-19:40 **INVESTIGATION PROCEDURE FOR THE DIAGNOSIS OF HISTORICAL MINARETS: INCLINED MINARET OF SIVAS ULU CAMI (MOSQUE)(invited)**
P. Inci*, O.F. Halici, C. Demir, M. Comert, B. Aldırmaz, S. Coban, F. Kiraz, F. Kuran, N. Berlucchi, R. Iyisan, A. Ilki

19:40-19:55 **PLANNING THE SHAKING TABLE TESTS OF A HISTORICAL BRICK MINARET REPRESENTING MID-HEIGHT EARLY OTTOMAN PERIOD ARCHITECTURE**
A. Birel, B. Koçak, O. F. Bayrak, E. Durgut, M. Ispir, A. Ilki

19:55-20:10 **QUICK EXTRACTION OF MORPHOLOGY PARAMETERS FOR RECYCLED CONCRETE SAND PARTICLES BASED ON DEEP LEARNING TECHNOLOGY**
Z.L. Yu, L. Hong*, L.L. Zhu

PROGRAM

6th September

- 19:15-21:55** **Session - STRUCTURAL HEALTH MONITORING**
Session Chairs: Li Hong, Mingyu Fan
- 20:10-20:25** **DEVELOPMENT OF STRUCTURAL CARBON NANOTUBE-BASED SENSING CEMENT COMPOSITE FOR ROCK BED DEFECTS**
M. Siahkouhi^{*}, J. Wang, J. Xie, G. Jing
- 20:25-20:40** **APPLICATIONS OF PHOTOGRAMMETRY-BASED 3D RECONSTRUCTION APPROACH FOR CUT SLOPE MONITORING**
Y. Wang^{*}, K. Y. Koo, W. Lu
- 20:40-20:55** **A TWO-STAGE STRUCTURAL IDENTIFICATION METHOD USING JAYA ALGORITHM AND GRADIENT-BASED LOCAL SEARCH**
G. Zhang, X. Xiong, S. Gao, C. Wan, S. Xue^{*}
- 20:55-21:10** **LONG SHORT & ATTENTION U-NETS: DEEP LEARNING-BASED MODELS FOR BUILDING CRACKS IDENTIFICATION**
M. Fan^{*}, Y. Gao, K. Li, Y. Li
- 21:10-21:25** **DESIGN METHOD OF ANTENNA SENSOR FOR DISPLACEMENT MONITORING BY ENCODING NOTCH FREQUENCY IN CROSS-POLARIZED SIGNAL**
K. Jiang, S. Xue, L. Xie^{*}, G. Wan
- 21:25-21:40** **MONITORING OF CABLE FORCE USING WIRED AND WIRELESS METHODS BASED ON PZT TRANSDUCER: A FEASIBILITY STUDY**
Y. Sun, H. Zhu^{*}, Y. Zou, Z. Dong, D. Chen, G. Wu
- 21:40-21:55** **STRUCTURAL DYNAMIC MONITORING VIA HILBERT ENHANCED PHASE-BASED METHOD**
M.Z. Li^{*}, G. Liu

PROGRAM

7th September

KEYNOTE LECTURER 03

15:00-15:35

BEHAVIOUR OF FRP-TO-CONCRETE BONDED JOINTS: WHAT WE KNOW AND WHAT WE DON'T KNOW

Prof. Dr. Dilum Fernando
The University of Edinburgh

KEYNOTE LECTURER 04

15:35-16:10

LONG TIME MONITORING OF HISTORIC STEEL RAILWAY BRIDGES

Prof. Dr. Salvador Ivorra
Professor, the University of Alicante

16:10-16:25

Break

16:25-18:50

Special Session - SHAPE MEMORY ALLOYS (SMAS) FOR ENGINEERING APPLICATIONS

Session Chairs: Moslem Shahverdi, Saim Raza

16:25-16:50

ANALYTICAL EQUATION FOR THE STRESS-STRAIN CURVE OF IRON-BASED SHAPE MEMORY ALLOYS UNDER SEMI-CYCLIC LOADING (invited)

L. A. Montoya-Coronado*, S. del Rio-Bonnín, J. G. Ruiz-Pinilla, C. Ribas, A. Cladera

16:50-17:05

SEISMIC RETROFITTING OF BRIDGE PIERS USING PRE-STRESSED Fe-SMA REBARS

S. Raza*, M. Julien, B. Shafei, M. S. Saiidi, M. Motavalli, M. Shahverdi

17:05-17:20

ACTIVE CONTINUITY OF HOLLOW CORE SLABS STRUCTURAL FLOOR BY USING IRON-BASED SHAPE MEMORY ALLOY RE-BARS

S. del Río-Bonnín*, L.A. Montoya-Coronado, C.R. Ribas, J.G. Ruiz-Pinilla, A. Cladera

17:20-17:35

BOND BEHAVIOR OF IRON-BASED SHAPE MEMORY ALLOY PRESTRESSING BARS IN 3D-PRINTED CONCRETE

Zafiris Triantafyllidis*, Ana Anton, Volha Semianiuk, Saim Raza, Mateusz Wyrzykowski, Benjamin Dillenburger, Moslem Shahverdi

17:35-17:50

IRON-BASED SMA U-SHAPED DAMPERS FOR ENHANCED LOW-CYCLE FATIGUE RESISTANCE – PROOF-OF-CONCEPT EXPERIMENTAL STUDY

J. Zhang, C. Fang*, M.CH Yam, C. Lin

PROGRAM

7th September

- 16:25-18:50** **Special Session - SHAPE MEMORY ALLOYS (SMAS) FOR ENGINEERING APPLICATIONS**
Session Chairs: Moslem Shahverdi, Saim Raza
- 17:50-18:05** **MULTI-PHYSICAL SIMULATION OF REINFORCED CONCRETE BARS STRENGTHENED WITH IRON-BASED SHAPE MEMORY ALLOYS**
Y.C. Zheng, Z.Q. Dong, H. Zhu, Z.Q. Liu, G. Wu*
- 18:05-18:20** **NUMERICAL ANALYSIS OF THE CRACK RESISTANCE OF POST-TENSIONED PRESTRESSED CONCRETE ANCHORAGE ZONE WITH SPIRAL FE-SMA STIRRUP**
J. Ji, Z. Dong*, Y. Sun, H. Zhu, G. Wu, Z. Liu, C. Wu
- 18:20-18:35** **A NUMERICAL STUDY ON FATIGUE CRACK GROWTH OF CRACKED STEEL PLATE REINFORCED BY SHAPE MEMORY ALLOY (SMA) PLATE AND CFRP**
X.W. Li, T. Chen*, M. Ye
- 18:35-18:50** **THERMOMECHANICAL SIMULATION OF UNIAXIAL ONE-WAY SHAPE MEMORY EFFECT OF SMAS BY FEM**
M. Ye, T. Chen*, X.W. Li
- 16:25-18:20** **Special Session - MULTI-HAZARD ASSESSMENT AND MITIGATION OF INFRASTRUCTURE**
Session Chairs: Fen Ling, Qian-Qian Yu
- 16:25-16:50** **FRAGILITY ASSESSMENT OF HIGH-RISE BUILDINGS SUBJECTED TO EARTHQUAKES AND STRONG WINDS (invited)**
X.L. Gu, L. Liu, Q.Q. Yu*
- 16:50-17:05** **COLLAPSED DEBRIS DISTRIBUTION OF RC FRAME STRUCTURES UNDER EARTHQUAKE EXCITATION AND SECONDARY EFFECTS**
F. Lin*, Z. Xu, X. Ren
- 17:05-17:20** **STUDY ON VEHICLE-BRIDGE INTERACTION EFFECT OF URBAN VIADUCT UNDER MULTI-DISASTER OF EARTHQUAKE-VEHICLE COLLISION**
W. Shi, Y. Xu*

PROGRAM

7th September

16:25-18:20 **Special Session - MULTI-HAZARD ASSESSMENT AND MITIGATION OF INFRASTRUCTURE**
Session Chairs: Fen Ling, Qian-Qian Yu

17:20-17:35 **CONTACT FORCE RESPONSE OF A THREE SPAN CONTINUOUS HIGHWAY BRIDGE -VEHICLE INTERACTION UNDER NEAR FAULT GROUND MOTION BASED ON STATISTICAL ANALYSIS**
G. Lin, Y. Xu*, C. Cui

17:35-17:50 **SIMULATION ANALYSIS OF BUILDING STRUCTURE UNDER COMBINED ACTION OF EARTHQUAKE AND EXPLOSION**
P.F. Zhou, X.H. Wu*

17:50-18:05 **MULTI-HAZARD DAMAGE ANALYSIS OF SELF-CENTERING VERSUS MONOLITHIC BRIDGE COLUMNS SUBJECTED TO COMBINED SEISMIC AND IMPACT LOADING**
M.S. Chang, H. Wu*, Y. Zhou

18:05-18:20 **EFFECTS OF AXIAL COMPRESSION RATIO IN SOCKETED PRECAST PIER-FOOTING CONNECTION**
S. Shivahari, Z. Zeng, Y. Xu*

18:20-18:35 **Break**

18:35-20:45 **Session - PERFORMANCE AND DAMAGE ASSESSMENT**
Session Chairs: Guangming Chen, Behrouz Shafei

18:35-19:00 **36-METER ARCH BRIDGES BASED ON FRP-CONCRETE-STEEL HYBRID DOUBLE-SKIN TUBULAR MEMBERS: RESEARCH, DESIGN AND CONSTRUCTION (invited)**
G.M. Chen*, Z.H. Lin, W. Xiong, J.G. Teng, F. Wang

19:00-19:15 **SHAKING TABLE TESTS ON THE EFFECT OF U-SHAPE DAMPERS ON A LIQUID STORAGE TANK ISOLATED BY MULTIPLE FRICTION PENDULUM BEARINGS**
J.Y. Wu, Q.Q. Yu, X.L. Gu*

19:15-19:30 **SEISMIC PERFORMANCE OF SELF-CENTRING STRUCTURAL SHEAR WALLS CONTAINING ENERGY DISSIPATORS: A NUMERICAL STUDY**
N.F.A. Yagoub*, X. Wang

19:30-19:45 **PROPERTIES OF BOUND CHLORIDE IONS IN CEMENTITIOUS MATERIALS**
X. Zhou, Z. Han, J. Zheng*

PROGRAM

7th September

18:20-20:45 **Session - PERFORMANCE AND DAMAGE ASSESSMENT**
Session Chairs: Guangming Chen, Behrouz Shafei

19:45-20:00 **DEGRADATION OF INTERFACIAL BEHAVIOR BETWEEN AFRP AND CONCRETE**
Y.Z. Zhao, Q.Q. Yu*

20:00-20:15 **IMPROVEMENT OF SHRINKAGE-COMPENSATING CEMENT CONCRETES TO PREVENT REINFORCEMENT CORROSION IN HARSH EXPOSURE CONDITIONS**
W. Shi, B. Shafei*

20:15-20:30 **RELATIONSHIP BETWEEN COMPRESSIVE STRENGTH AND PORE STRUCTURE OF CONCRETE**
Q. Zhang, L. Que, L. Song*, N. Xu, J. He

20:30-20:45 **CALCULATION MODEL FOR PROGRESSIVE COLLAPSE RESISTANCE OF RC BEAM-COLUMN SUBSTRUCTURES UNDER ARBITRARY RESTRAINT STIFFNESS**
X.J. Yang, F. Lin*, X.L. Gu

19:05-20:30 **Session - DAMAGE CONTROL, REPAIR AND STRENGTHENING**
Session Chairs: Ayaho Miyamoto, Cheng Jiang

19:05-19:30 **DEVELOPMENT OF AN INTEGRATED MAINTENANCE SYSTEM FOR DETERIORATING SEWAGE PIPE NETWORKS (invited)**
A. Miyamoto*

19:30-19:45 **MAXWELL MODEL OF FLUID VISCOUS DAMPERS IN ELASTIC AND INELASTIC SDOF SYSTEMS**
M.S. Sebaq, Y. Zhou*

19:45-20:00 **3D RBSM: A NEW MESOSCALE DISCRETE APPROACH FOR FRP-CONCRETE INTERFICAL SIMULATION**
C. Jiang*, K. Avadh, K. Nagai

20:00-20:15 **RESEARCH ON DESIGN METHOD OF FRP ANCHOR IN RC COLUMNS CONFINED WITH BIDIRECTIONAL FRP SHEETS**
P. Gao*, Z. Chen, D. Yuan, T. Wang

20:15-20:30 **EXPERIMENTAL STUDY ON FATIGUE PROPERTIES OF RIB-TO-DECK WELDS REPAIRED BY ANGLE STEEL**
B.W. Gao, X. Jiang, Z.L. Lv, X.H. Qiang*

PROGRAM

7th September

- 20:45-22:10** **Session - DAMAGE CONTROL, REPAIR AND STRENGTHENING**
Session Chairs: Tao Chen, Bin Peng
- 20:45-21:10** **PARAMETRIC ANALYSIS OF THE “OPTIMAL” SEISMIC RETROFIT OF RC FRAMES(invited)**
F. Nigro, R. Falcone, E. Martinelli*
- 21:10-21:25** **STRENGTHENING MASONRY WALLS USING SPRAYED GLASS FIBER-REINFORCED GYPSUM AGAINST SETTLEMENT-INDUCED DAMAGES**
K.D. Dalgic*, D.B. Gulen, B. Ozdemir, Y. Liu, S. Acikgoz, M. Marasli, A. Ilki
- 21:25-21:40** **COMPARISON OF STRENGTHENING TECHNIQUES FOR TYPICAL STONE MASONRY IN MUD MORTAR (SMM) WALLS POPULAR IN RURAL NEPAL**
M. Sakhakarmi, S.M. Shakya, A. Joshi, B. Peng*
- 21:40-21:55** **EXPERIMENTAL FATIGUE BEHAVIOR OF NSM CFRP-STRENGTHENED RC BEAMS UNDER HIGH SERVICE TEMPERATURE**
Y. Jahani*, M. Baena, J. Sena-Cruz, M. Aghabagloo, C. Barris, L. Torres
- 21:55-22:10** **EXPERIMENTAL STUDY AND THEORETICAL ANALYSIS ON THE FLEXURAL BEHAVIOUR OF RC BEAMS STRENGTHENED WITH EXTERNALLY BONDED REINFORCEMENT ON GROOVE (EBROG) CFRP**
A. Codina*, C. Barris, Y. Jahani, M. Baena, L. Torres
- 21:00-22:40** **Special Session - ENVIRONMENTAL IMPACT ON PERFORMANCE OF CONCRETE STRUCTURES**
Session Chairs: Xiguang Liu, Zheng Dong
- 21:00-21:25** **A NEW APPROACH FOR SPATIOTEMPORAL VARIABILITY ANALYSIS OF MARINE RC STRUCTURES CONSIDERING DIFFERENT EXPOSURE ZONE (invited)**
R.J. Wu, J. Xia*, K.Y. Chen
- 21:25-21:40** **CORROSION CRACKING CONDITION FOR REINFORCED CONCRETE IN FREEZE-THAW ENVIRONMENT**
X. Liu*, Z. Yan, R. Zhao, D. Niu

PROGRAM

7th September

- 21:00-22:40** **Special Session - ENVIRONMENTAL IMPACT ON PERFORMANCE OF CONCRETE STRUCTURES**
Session Chairs: Xiguang Liu, Zheng Dong
- 21:40-21:55** **PORE STRUCTURE CHARACTERIZATION OF CEMENT PASTE BY XCT AND FIB/SEM**
Y.J. Pan, Z.L. Jiang^{*}, Y.C. Wang, J.F. Lu
- 21:55-22:10** **THE CORROSION PROPAGATION STAGE OF STAINLESS STEEL REINFORCEMENT**
C.L. Alexander^{*}, N.S.M. Orozco, S.K. Coleman, A.A. Sagues
- 22:10-22:25** **PREDICTION OF HEAT-MOISTURE TRANSPORTATION IN CONCRETE UNDER LOW TEMPERATURES**
Y. Wang, Y. Xi^{*}
- 22:25-22:40** **CORROSION DETECTION IN CONCRETE USING ELECTRICAL IMPEDANCE TOMOGRAPHY**
T. Ruan, A. Poursaei^{*}

PROGRAM

8th September

- 15:00-15:35** **KEYNOTE LECTURER 05**
EARLY MONITORING OF CIVIL STRUCTURAL DISEASES AND DISASTERS
Prof. Dr. Zhishen Wu
Southeast University
- 15:35-16:10** **KEYNOTE LECTURER 06**
IRON-BASED SHAPE MEMORY ALLOYS IN CIVIL ENGINEERING – FROM EARLY DEVELOPMENTS TO MARKET IMPLEMENTATION
Dr. Julien Michels
re-fer AG
- 16:10-16:25** **Break**
- 16:25-18:35** **Special Session - LIFE-CYCLE ASSESSMENT AND MAINTENANCE OF STEEL STRUCTURES**
Session Chairs: Pierluigi Colombi, Enzo Martinelli
- 16:25-16:50** **EXTERNALLY BONDED CFRP REINFORCEMENT OF STEEL STRUCTURES: MECHANICAL CHARACTERIZATION OF A TOUGHENED EPOXY ADHESIVE (invited)**
P. Colombi, M. Bocciarelli, A.S. Calabrese, T. D' Antino, T. Papa*
- 16:50-17:05** **APPLICATION OF A TOUGHENED EPOXY ADHESIVE FOR THE FATIGUE STRENGTHENING OF STEEL STRUCTURES**
P. Colombi, M. Bocciarelli, A.S. Calabrese, T. D' Antino, T. Papa*
- 17:05-17:20** **STOCHASTIC CALIBRATION OF A CYCLIC COHESIVE ZONE MODEL THROUGH MONTE CARLO ANALYSIS**
T. Papa, P. Colombi, M. Bocciarelli*
- 17:20-17:35** **FATIGUE BEHAVIOR OF STEEL PLATES WITH INCLINED BUTT-WELDED JOINTS**
X.Y. Ding, L.L. Hu*
- 17:35-17:50** **APPLICATION OF SMART CFRP EMBEDDING PPP-BOTDA FIBER SENSORS ON FATIGUE STRENGTHENING OF CRACKED STEEL STRUCTURE**
H. Ye*, Y. Ye, A. Huang, Z. Wang

PROGRAM

8th September

16:25-18:35 **Special Session - LIFE-CYCLE ASSESSMENT AND MAINTENANCE OF STEEL STRUCTURES**
Session Chairs: Pierluigi Colombi, Enzo Martinelli

17:50-18:05 **SIMPLIFIED NUMERICAL MODEL-BASED STRESS INTENSITY FACTOR OF CFRP REPAIRED FILLET WELDS CONNECTING CORRUGATED WEBS**
Q.F. Wang¹, Z.Y. Wang^{1,2*}, Q.H. Shi¹

18:05-18:20 **FEATURE POINTS RECOGNITION OF WEAK TEXTURE STEEL PLATE**
T. Gao, Q.Q. Yu*

18:20-18:35 **EXPERIMENTAL RESEARCH ON TENSILE FATIGUE PERFORMANCE OF SURFACE CRACKED STEEL PLATES REINFORCED WITH CFRP**
Z.X. Li, T. Chen*, P.C. Peng

16:25-18:35 **Special Session - UHPC: FROM MATERIALS TO STRUCTURES**
Session Chairs: Tengfei Xu, Yue Huang

16:25-16:50 **A NEW UHPC-BASED GRAVITY-TYPE HALF GROUDED SLEEVE CONNECTIONS FOR PREFABRICATED STRUCTURE (invited)**
W. Fan*, H. Su, Y. He, W. Sun, X. Shao

16:50-17:05 **FATIGUE BEHAVIOR OF SHORT-HEADED STUD CONNECTORS IN STEEL-UHPC COMPOSITE BRIDGE DECK**
Z. Shi*, Q. Su

17:05-17:20 **EXPERIMENT ON CREEP DAMAGE, AND FAILURE OF UHPC UNDER SHORT-TERM SUSTAINED AXIAL COMPRESSION**
Z. Zhang, T. Xu*

17:20-17:35 **ULTRA-HIGH PERFORMANCE FIBER REINFORCED CONCRETE JACKETS RETROFITTING OF RECTANGULAR BRIDGE PIERS FOR ENHANCED SEISMIC BEHAVIORS**
S.Y. Zhuo, Z. Liu*, T. Tong, S.Q. Yuan

PROGRAM

8th September

- 16:25-18:35** **Special Session - UHPC: FROM MATERIALS TO STRUCTURES**
Session Chairs: Tengfei Xu, Yue Huang
- 17:35-17:50** **EARLY-AGE CRACK MODELLING IN CONCRETE- A COMPARISON OF AVAILABLE MODELLING APPROACHES**
I. Khan^{*}, G. Yang
- 17:50-18:05** **MECHANICAL PERFORMANCE ASSESSMENT OF ULTRA-HIGH PERFORMANCE SEAWATER SEA-SAND CONCRETE INCORPORATING LIMESTONE CALCINED CLAY CEMENT (LC3)**
J. Wang, Y. Huang^{*}
- 18:05-18:20** **STEEL-ALKALI ACTIVATED CEMENT BASED ULTRA-HIGH PERFORMANCE CONCRETE LIGHTWEIGHT COMPOSITE BRIDGE DECKS: FLEXURAL BEHAVIOR**
W. You, M.A. Bradford, H. Liu, W. Zhao, G. Yang^{*}
- 18:20-18:35** **THE INNOVATION OF UHPC BRIDGE DESIGN THEORY AND STRUCTURAL SYSTEM**
J.N. Qi, Y. Jiao, J.Q. Wang^{*}
- 18:35-18:50** **Break**
- 18:50-20:15** **Special Session - LIFE-CYCLE ASSESSMENT AND MAINTENANCE OF STEEL STRUCTURES**
Session Chairs: Elyas Ghafoori, Lili Hu
- 18:50-19:15** **FATIGUE STRENGTHENING OF STEEL MEMBERS USING WAAM TECHNOLOGY (invited)**
E. Ghafoori, H. Dahaghin, C. Diao, N. Pichler^{*}, L. Li, J. Ding, S. Ganguly, S. Williams
- 19:15-19:30** **EXPERIMENTAL INVESTIGATION ON THE MECHANICAL BEHAVIOR OF FE-SMA ADHESIVELY BONDED JOINTS**
L. Li^{*}, W. Wang, E. Chatzi, E. Ghafoori
- 19:30-19:45** **MECHANICAL MODEL OF FE-SMA ADHESIVELY BONDED JOINTS**
L. Li^{*}, E. Chatzi, E. Ghafoori
- 19:45-20:00** **NUMERICAL MODELLING AND DESIGN OF A STRENGTHENING SYSTEM WITH ADHESIVELY-BONDED FE-SMA FOR STEEL GIRDERS**
S. Wang, L. Li, Q. Su, X. Jiang^{*}, E. Ghafoori

PROGRAM

8th September

- 18:50-20:15** **Special Session - LIFE-CYCLE ASSESSMENT AND MAINTENANCE OF STEEL STRUCTURES**
Session Chairs: Elyas Ghafoori, Lili Hu
- 20:00-20:15** **FATIGUE STRENGTHENING OF U-RIB BUTT WELDS IN ORTHOTROPIC STEEL BRIDGE DECKS USING CFRP SHEETS**
Z.L. Lv, X. Jiang, X.H. Qiang*, J. Bai, E. Ghafoori
- 18:50-20:15** **Special Session - INTELLIGENT INSPECTION, MONITORING AND ASSESSMENT OF INFRASTRUCTURES**
Session Chairs: Jiangpeng Shu, Alfred Strauss
- 18:50-19:15** **DATA-DRIVEN STRUCTURE DISPLACEMENT RESPONSE SURROGATE MODEL USING CONVOLUTIONAL NEURAL NETWORK (invited)**
J. Li, G.Y. Liu, J.P. Shu*
- 19:15-19:30** **DATA INFORMED ASSESSMENT OF STRUCTURES**
A. Strauss*, K. Bergmeister, P. Daró, G. Mancini, E. Apostolidi, A.B. Vliet
- 19:30-19:45** **DETECTION AND LOCALIZATION OF LOOSENESS IN MULTIPLE BOLTS USING TIME REVERSAL SIGNAL AND NEURAL NETWORK TECHNIQUES**
X.D. Sui, Y.F. Duan*, C.B. Yun, Z.F. Tang
- 19:45-20:00** **INTERNAL CRACK DETECTION AND CROSS-SECTION RECONSTRUCTION OF REINFORCED CONCRETE STRUCTURE BASED ON ULTRASONIC TOMOGRAPHY AND DEEP LEARNING**
H. Yang, S.H. Li, X.Y. Wang, B. Yang, S.X. Wang, J.P. Shu*
- 20:00-20:15** **SHEAR TESTS OF REINFORCED CONCRETE BEAMS WITH THE INFLUENCE OF INITIAL SHEAR CRACKS**
K. Yu, J. Yang, J. Li, J.P. Shu*, A. Strauss, K. Zandi
- 20:15-20:30** **Break**
- 20:30-21:30** **Closing and Awards, Announcement of next SMAR Conference**