

Program, Friday, 15/9/17

08.00–18.00	Registration Desk open and upload of presentations at conference presentation rooms	Room 1
08.30–09.20	Keynote Prof. S. Pampanin Towards the practical implementation of performance-based assessment and retrofit strategies for RC buildings: challenges and solutions	
09.20–09.30	IIFC information by R. El-Hacha	
09.30–10.00	Coffee break	

10.00–12.00

Session 21 Room 1

Co-chairs: Meier, U. and Ilki, A.	
Session Practical applications/ case studies	
14	Performance of a Hybrid FRP-Reinforced Bridge Truss Girder System – Experimental Assessment <i>El-Badry, M., Morawvej, M., Joulani, P.</i>
48	Monitoring the structural response of historical Islamic minarets to environmental conditions <i>Hamed, A., Osman, A., Malek, C.</i>
55	Preliminary estimates of the viability of UAV - based bridge inspections in Switzerland <i>Kielhauser, C., Romer, F.P., Adey, B.T.</i>
81	Strengthening & waterproofing of concrete structures with Ductal® UHPFRC <i>Boiron, L., Wassmann, K., Brühwiler, E.</i>
88	Behavior of composite concrete-cellular steel beams under combined flexure and torsion <i>Oukailli, N.K., Adbullaah, S.S.</i>
272	Structural Performance of Innovative Precast Hollow Concrete Walls for Buildings <i>Ibrahim, M., Rahman, M.K., AlHems, L.M., Maslehuddin, M.</i>
266	Structural response of full-scale concrete bridges subjected to high load magnitudes <i>Halding, P.S., Schmidt, J.W., Jensen, T.W., Henrikson, A.H.</i>
357	Architectural Approach and Design of the Restoration Project of the Seyh Süleyman Masjid <i>Berlucci, N., Aydemir, O., Simsek, M., Kuran, F.</i>

Session 22 Room 2

Co-chairs: Miyamoto, A. and Harik I.S.	
Session SHM	
173	Duffing-like model for the hysteresis modelling of MR damper <i>Tu, J.-Y., Ke, J.-C., Lin, Y.-B.</i>
196	Study of SPM monitoring improvement <i>Castelli, P., Rizzo, M., Spadaccini, O., Vignoli, A.</i>
197	Managing Structural Health Monitoring Data Using Building Information Modelling <i>Valinejadshoubi, M., Bagchi, A., Moselhi, O.</i>
203	Earthquake laboratory tests on balconies with thermal break elements (Schöck Isokorb) <i>Standeker, J., Bärtschi, R.</i>
204	Stiffness degradation under flexural loading using MEMS inclinometers sensors <i>Lahuerta, F., de Ruiter, M.J.</i>
250	Evaluation of strains and stresses of prestressed girders for Bridge A7957, MO, USA (Field study) <i>Alghazali, H.H., Myers, J.J.</i>
251	Dynamic Load Allowance of a Prestressed Concrete Bridge through Field Load Tests <i>Hernandez, E.S., Myers, J.J., Chen, G.</i>
182	Analysis of Structural Health Monitoring Data for cable-stayed bridge with ruptured cables <i>Gil, H., Park, J.</i>

Session 23 Room 3

Co-chairs: Martinelli, E. and Sezen, H.	
Session Performance, damage assessment	
70	Numerical simulations of medium and high frequency elastic waves for damage detection in composite wind turbine blades <i>Szlaszynski, F., Omenzetter, P.</i>
131	Prediction of mechanical properties of engineered cementitious composites using artificial neural network <i>Shi, L., Lin, S., Lu, Y., Bai, Y.</i>
136	Seismic performance assessment of FPS isolated liquid storage tanks at various intensity levels <i>Bagheri, S., Hayati Raad, H.</i>
254	Modeling the bond of GFRP and concrete based on a damage evolution approach <i>Rezazadeh, M., Carvelli, V., Veljkovic, A.</i>
343	Quantification of initial defects in concrete caused by low temperature curing before 28d <i>Li, S., Hao, W., Ji, T., Chen, G., Dou, T.</i>
321	Wind Analysis of the Bosphorus Suspension Bridge: Numerical and Experimental Investigation <i>Bas, S., Apaydin, N.M., Ilki, A., Catbas, F.N.</i>
294	Effect of vehicle-induced impact on hanger of a half-through tied steel arch bridge <i>Gao, J., Zheng, Y., Zhao, B.</i>
286	Toughened 2K-Epoxy Adhesives: From Automotive and Wind towards Construction <i>Mayer, C., Meier, T., Hofstter, D., Bosshard, B.</i>

Session 24 Room 4

Co-chairs: Voigt, G. and Rabinovitch, O.	
Session Damage control, strengthening	
236	Fatigue life prediction of RC beams strengthened with FRP through MLE method <i>Meneghetti, L.C., Garcez, M.R., Teixeira, R.M., Pinto da Silva Filho, L.C.</i>
221	Cyclic Compression Behavior of Concrete-Filled Hybrid Large Rupture Strain FRP Tubes <i>Nain, M., Abdulazeez, M.M., ElGawady, M.A.</i>
271	Evaluation of Performance of RC Beam – Column Joint Externally Strengthened with Steel Strips <i>Al-Naghi, A., Al-Osta, M., Rahman, M.K., Al-Gadhib, A.</i>
276	Behavior of Concrete Confined by Jute Natural Fiber Reinforced Polymer with Heat Treatment <i>Voravutvityaruk, T., Jirawattanasomkul, T., Ueda, T., Wuttiwannasak, N., Poonswat, T.</i>
280	Ductility improvement of existing RC columns strengthened with CFRP <i>Del Zoppo, M., Di Ludovico, M., Balsamo, A., Prota, A.</i>
284	Finite Element Analysis for Obtaining Structural Performance of Bridge Pier Interacting with Soil <i>Sentürk, M., Pul, S.</i>
287	Effects of soil - structure interaction on design of reinforced concrete structures for various earthquake zones structures <i>Kilicer, S., Ozgan, K., Daloglu, A.T.</i>
288	Time-dependent bond behavior between NSM CFRP strips and concrete <i>Emara, M., Baena, M., Barris, C., Torres, L., Moavvad, M., Perera, R.</i>

12.00–13.30 Lunch

Program, Friday, 15/9/17

13.30–15.30

Session 25 Room 1

Co-chairs:
Ghafoori, E. and Dawood, M.

Session Metallic Structures

- 332 **Fatigue strengthening of tubular X joint using un-bonded CFRP laminates**
Khayatamad, M., Shariatmadar, De Backer, H.
- 67 **A novel mechanical clamp for strengthening of steel members using prestressed CFRP plates**
Hosseini, A., Ghafoori, E., Motavalli, M., Nussbaumer, A., Al-Mahaidi, R., Terrasi, G.
- 267 **Retrofitting of Ayala Bridge, an Historic Steel bridge in Manila (Philippines)**
Buchin-Roulie, V., Kaczkowski, N., Gros, A., Tesson, F.
- 171 **Stiffness prediction of CFRP/steel double strap joints**
Lu, Y., Li, W., Liang, H., Liu, Z.
- 353 **Performance assessment of Shape Memory Alloy plates for recovery of deflection in steel frame**
Bajoria, K.M., Jadhav, R.
- 112 **Strengthening of steel plate by carbon fiber sheet under axial compression force**
Hidekuma, Y., Ohgaki, K., Okuyama, Y., Miyashita, T., Kobayashi, A.
- 157 **Behavior of Retrofitted Concrete Members Using Iron-Based Shape Memory Alloys**
Zerbe, L., Reda, M., Dawood, M., Belarbi A., Michels, J., Senouci, A., Genctruk, B., Al-Ansari, M.

Session 26 Room 2

Co-chairs:
Miyamoto, A. and Inaudi, D.

Session SHM

- 279 **Clarifying distinctive acoustic emission signal features of a steel fiber reinforced concrete beam by parameter analysis**
Tayfur, S., Alver, N., Saatci, S.
- 199 **A Three-dimensional Structural Health Monitoring System Using Multi-Scale Sample Entropy**
Lin, T.K., Tzeng, T.-C., Lin Y.
- 282 **UQ and FE model updating of large scale steam turbine rotor**
Giagopoulos, D., Arailopoulos, A.
- 285 **Millimeter Wave Imaging of Notches in Metal Specimens under Dielectric Coating Using Image Processing**
Hoshyar, A.N., Kharkovsky, S., Samali, B., Zoughi, R.
- 293 **Infrastructure management integrating SHM and BIM procedures**
Del Grosso, A., Basso, P., Ruffini, L., Figini, F., Cademartori, M.
- 320 **Smart reinforcement steel bars embedded with low-cost MEMS sensors for strain monitoring**
Tondolo, F., Cesetti, A., Matta, E., Quattrone, A., Sabia, D.
- 281 **Measuring vertical strains and temperature with fiber optics in diaphragm walls**
Goeminne, E., Couck, J., Brutin, M., Benoot, J., De Vos, L.
- 185 **GNSS and Earth Observation for Structural Health Monitoring (GeoSHM) of the Forth Road Bridge**
Psimoulis, P., Meng, X., Owen, J., Xie, Y., Nguyen D.T., Ye, J.

Session 27 Room 3

Co-chairs:
Czaderski, C. and Beyer, K.

Session Durability issues

- 12 **Long-term behavior of RC slabs strengthened with EB CFRP strips subjected to sustained load and exposed to solar radiation**
Gallego, J.M., Czaderski, C., Michels, J.
- 109 **Behaviour of Carbon Fiber Reinforced Polymer (CFRP), with and without fire protection material, under combined elevated temperature and mechanical loading condition**
Nguyen, P.L., Vu, X.H., Ferrier, E.
- 144 **A study on fatigue durability of the top surface repair method using two types of adhesives for damaged RC slabs**
Ito, K., Abe, T., Fuchigami, M., Kozakai, N. Kodama, T.
- 152 **Determining Moisture in Materials and IoT**
Voigt, G., Helmerich, R., Adao, F., Rückschloss, M.
- 153 **Humidity monitoring in concrete using Bluetooth Low Energy sensors**
Adao, F.J.F.S., Helmerich, R., Voigt, G., Modenhauer, L., Neumann, P.P.
- 324 **A method to inspect the risk of fire spalling of existing concrete members**
Lu, F., Bärtschi, R., Fontana, M.
- 255 **The Effects of Engineering Properties of Waste Tires into Self Compacting Concretes**
Öztürk, H., Bideci, A., Salli Bideci, Ö.
- 97 **Performance Evaluation of Concrete Structures Reinforced by Corrosion Free FRP and SMA Materials**
Parvin, A., Raad, J.

Session 28 Room 4

Co-chairs:
Shahverdi, M. and Gao, J. Ms

Session Damage control, strengthening

- 180 **DIC and numerical analysis of polymer flexible adhesive in composite-to-brick strengthening**
Kwiecień, A., Tekieli, M., Słoński, M., Hojdys, L., Krajewski, P.
- 290 **Assessment of an existing masonry structure using linear and nonlinear material models**
Gunes, B., Mangir, A., Okumus V.
- 296 **Different application methods on CFRP- and GFRP- confined concrete: experimental results**
Moretti, M.L., Arvanitopoulos, E.
- 326 **Use of the disipador SL-B in the rehabilitation of health facilities in Cuba**
Valdés Jiménez, V.M., Pupo Ordone, D., Fernandez Pérez, R.M., Martinez Almaguer, R.
- 340 **Research Progress on Low Temperature Anti-crack Design of Hydraulic Epoxy Mortar Protective Material**
Huang, H., Hao, J., Dou, T., Li, S.
- 349 **Parametric investigation on the behaviour of CFRP wrapped concrete columns**
Fareed, S., ur Rehman Khan, A.
- 299 **Preloading effect on strengthening efficiency of RC beams strengthened with NSM strips**
Kotynia, R., Pryzigocka, M.
- 98 **Collapse Analysis of Concrete Frame Structures Subjected to Extreme Loading**
Parvin, A., Khandel, O., Crozier, D., Raad, J.

15.30–16.00 Coffee break

Program, Friday, 15/9/17

16.00–17.30

Session 30 Room 2

Co-chairs:
Helmerich, R. and Amiri, M.M.

Session SHM

- 338 **Monitoring of tunnel shape using distributed optical fiber sensing techniques**
Kishida, K., Yamauchi, Y., Nishiguchi, K., Guzik, A.
- 246 **Carbon nanoparticles to monitor moisture damage propagation in GFRP**
Taha, E.O., Kandil, U., Emiroglu, M., Reda Taha, M.M.
- 341 **Monitoring of subway intersection tunnels during TBM excavation in urban distressed areas**
Amiri, M.M., Kouhsankini, A.
- 73 **Natural stone floors monitoring – inference on persistence of humidity spots**
Donadini, F., Rück, P., Portmann, B.
- 176 **Acoustic monitoring of a prestressed concrete beam reinforced by adhesively bonded composite**
Chataigner, S., Gaillet, L., Falaise, Y., David, J.-F., Michel, R., Aubagnac, C., Houel, A., Germain, D., Maherault, J.-P.
- 253 **Sensitive Smart Concrete Loaded with Carbon Black Nanoparticles for Traffic Monitoring**
Monteiro, A., Cachim, P., Costa, P.M.F., Oeser, M.

Session 31 Room 3

Co-chairs:
Michels, J. and Myers, J.

Session Performance, damage assessment

- 339 **Evaluating Compactness of CSGR by Falling-Ball Test**
Feng, W., Zhang, Y., Lu, X., Liu, Z.
- 344 **Study and Application of Epoxy Coating in Freshwater mussels Prevention in Hydraulic Tunnels**
Xia, S., Dou, T., Li, J., Zhao, B., Yao, G., Zhou, J.
- 323 **Decision support for bridge condition assessment**
Honfi, D., Leander, J., Björnsson, I.
- 106 **Reliability analysis of available relations and suggestion of a new formula for effective moment of inertia in concrete beams with FRP bars reinforcement**
Arabshahi, A., Gharaei-Moghaddam, N., Tavakkolizadeh, M., Arashani, A.
- 154 **Output-Only System Identification on 199+325 Steel Railway Bridge**
Ozcelik, O., Yormaz, D., Girgin, O., Yucel, U., Durmazgezer, E., Amaddeo, C., Kahraman, S.
- 209 **Numerical Study on Seismic Isolation for Medium-rise Buildings Using Rubber-Sand Mixtures**
Edinçiller, A., Yildiz, O.