

Program, Wednesday, 13/9/17

08.00–18.00	Registration Desk open and upload of presentations at conference presentation rooms	Room 1
08.30–10.00	Welcome address by Prof. Dr. M. Motavalli and Prof. Dr. A. Ilki, Conference Chairs Lecture by Deputy Director of Empa, Dr. Peter Richner	
10.00–10.30	Coffee break	
10.30–11.10	Keynote by Prof. R. Al-Mahaidi Advanced hybrid experimental/numerical strategies for safer structures	
11.10–11.50	Keynote by Prof. K. Beyer Seismic retrofit of cultural heritage buildings – when less is more	
11.50–12.00	Presentation by Gold sponsor	
12.00–13.30	Lunch	

13.30–15.00

Session 1 Room 1

Co-chairs:
Al-Mahaidi, R. and Ghafoori, E.

Session Metallic Structures

- 120 **Development, testing, and FEA of a SMA/CFRP patch for repair of cracked metallic structures**
Dawood, M., Zheng, B., El-Tahan, M.
- 82 **Intermediate debonding on cracked steel beams reinforced with CFRP plates under fatigue**
Bocciarelli, M., Colombi, P., Fava, G., D'Antino, T.
- 177 **Crack-reinforcement of old steel structures using adhesively bonded composite**
Lepretre, E., Chataigner, S., Dieng, L., Gaillet, L.
- 68 **An experimental investigation into bond behavior of prestressed CFRP to steel substrate**
Hosseini, A., Wellauer, M., Ghafoori, E., Sadeghi Marzaleh, A., Motavalli, M.
- 260 **Feasibility of iron-based shape memory alloy strips for prestressed strengthening of steel plates**
Izadi, M., Ghafoori, E., Hosseini, A., Motavalli, M., Maalek, S., Czaderski, C., Shahverdi, M.

Session 2 Room 2

Co-chairs:
Comert, M. and Sena-Cruz, J.

Session Durability issues

- 168 **Durability of HC-FCS cylinders subjected to hybrid environmental and mechanical loads**
Wang, S., ElGawady, M.
- 172 **Characterization of thermomechanical properties of a textile reinforced concrete (TRC) under high temperature**
Tlaji, T., Vu, H.X., Ferrier, E., Larbi, A.S., Michel, M.
- 200 **Automated Detection of Areas of Deterioration in GPR Images for Bridge Condition Assessment**
Shakibabarough, A., Bagchi, A., Zayad, T.
- 232 **Bond strength of fly ash geopolymer with CFRP fabric after exposure to high temperature**
Sarker, P.K., Borak, A., Mukherjee, A., Rangan, V.R.
- 354 **Structures and buildings rehabilitated with FRP: durability issues and challenges for materials advancements**
Frigione, M.
- 292 **Durability monitoring of reinforced concrete**
Segui Femenias, Y., Angst, U., Elsener, B.

Session 3 Room 3

Co-chairs:
Shahverdi, M. and Saiidi, S.

Session SMA

- 39 **Analysis, Design, and Construction of SMA-Reinforced FRP-Confined Concrete Columns**
Tazarv, M., Saiidi, S.M.
- 77 **Active shear strengthening of RC beams using shape memory alloys**
Rius, J., Cladera, A., Ribas, C., Mas, B.
- 118 **Iron-based shape memory alloy strips, Part 1: characterization and material behavior**
Shahverdi, M., Michels, J., Czaderski, C., Arabi-Hashemi, A., Motavalli, M.
- 116 **Iron-based shape memory alloy strips, Part 2: flexural strengthening of RC beams**
Michels, J., Shahverdi, M., Czaderski, C., Schranz, B., Motavalli, M.
- 239 **Functional properties of Fe-based shape memory alloys containing finely dispersed precipitates**
Krooß, P., Vollmer, M., Chumlyakov, Y., Niendorf, T., Somson, C.
- 242 **Stress recovery behavior of an Fe - Mn - Si - Cr - Ni - VC shape memory alloy subjected to cyclic fatigue loading**
Ghafoori, E., Hosseini, E., Michels, J.

Session 4 Room 4

Co-chairs:
Nussbaumer, A. and Ilki, A.

Session Damage control, strengthening

- 11 **Strengthening of short span steel jetty exposed to abnormal loads**
Oukaili, N.K.
- 27 **Standardization approach for a new class of retrofitting systems**
Walendy, B., Sedlmair, R., Stempniowski, L.
- 33 **A New Concept for Sustainable Refurbishment of Existing Bridges Using FRP Materials**
Yang, J., Haghani, R., Ricci, F., Valvo, P.S., Veltkamp, M.
- 35 **Internal and external transversal reinforcement interaction in RC beams strengthened in shear with externally bonded composites**
Gonzalez-Libreros, J., D'Antino, T., Sneed, L.H., Pellegrino, C., Giacomini, G.
- 41 **Strengthening an existing industrial building by optimally designed passive dampers under seismic and service loads**
Khansefid, A., Bakhshi, A.
- 49 **Emergency retrofitting of a shear-damaged RC column using fiber belt prestressing**
Nakada, K., Castro, J.J.

15.00–15.30 Coffee break

Program, Wednesday, 13/9/17

15.30–17.00

Session 5 Room 1

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

Session Metallic Structures

- 22 **Tools for efficient and accurate strain cycles monitoring of metallic railway bridges with wireless sensor networks**
Feltrin, G., Popovic, N., Jalsan K.-E.
- 259 **Development of anchorage systems for strengthening of steel plates with iron - based shape memory alloy strips**
Izadi, M., Ghafoori, E., Hosseini, A., Motavalli, M., Maalek, S.
- 66 **Fatigue strengthening of cracked steel plates using prestressed unbonded CFRP reinforcements**
Hosseini, A., Ghafoori, E., Motavalli, M., Nussbaumer, A., Zhao, X.-L., Koller, R.
- 342 **Recent developments of strengthening techniques for metallic structures**
Ghafoori, E., Dawood, M., Hosseini, A.
- 245 **CFRP strengthening of cast and wrought iron structures**
Moy, S.S.J.

Session 6 Room 2

Co-chairs:
Helmerich, R. and Nöther, N.

Session SHM

- 15 **Damage detection method based on state representation methodology (SRM)**
Miyamoto, A., Brühwiler, E.
- 26 **Quantitative estimation method of rebar corrosion degree of RC structures**
Oshita, H., Kanemoto, K.
- 36 **Evaluating the stresses in a supertall structure: Field monitoring and numerical analysis**
Osman, A., Malak, C.
- 38 **Predicting Freeze-Thaw Damage using Tipping Point Analysis of Strain Data**
McAlorum, J., McKeeman, I., Perry, M., Niewczas, P.
- 45 **Optical and Acoustic Techniques for Crack Monitoring in RC Building Structures**
Watanabe, T., Yanase, T., Takahashi, N., Ogata, Y., Sakurai, M., Kobayashi, J.
- 51 **Laboratory experiment for damage assessment using the DAD-method**
Erdenebat, D., Waldmann, D., Teferle, F.N.

Session 7 Room 3

Co-chairs:
Czaderski, C. and Cladera, A.

Session SMA

- 355 **New anchorage mechanism for smooth Fe-SMA bar used for flexural strengthening of RC beams using NSM technique**
Rojob, H., El-Hacha, R.
- 318 **SMA Bar Dampers using Bending Behavior Combined with Tension or Compression**
Choi, E., Park, S., Woo, D., Chae, S., Lee, S.-Y., Kwon, E., Park, H., Hoan, N.D.
- 347 **Deflection of SE-SMA reinforced concrete Beams-Column joints**
Kaduskar, S., Bajoria, K.M.
- 350 **Evaluation of mechanical behavior of NiTi/NiTiCu bi-layer composites aided by analytical modelling and FEM validation**
Taghizadeh, M., Nili-Ahmadabadi, M., Malekshoaraei, M.H.
- 351 **On the pseudoelastic behaviour in a lath martensitic steel under two discrete processes consist of cold rolling and heat treatment**
Koohdar, H.R., Nili-Ahmadabadi, M., Habibi-Parsa, M., Jafarian, H.R.

Session 8 Room 4

Co-chair:
El-Badry, M. and Selcuk, B.

Session Damage control, strengthening

- 54 **Rapid repairing mortar material for corroded reinforced concrete structure**
Siu, K.M.C., Leung, C.K.Y., Wu, C., Lu, C., Lam, J.Y.K.
- 94 **Punching shear in reinforced concrete bubbled slabs: experimental investigation**
Oukaili, N.K., Husain, L.F.
- 128 **A soft-computing approach to seismic retrofitting of existing RC structure**
Falcone, R., Lima, C., Faella, C., Martinelli, E.
- 129 **Design, Construction, and Performance of an Elevated Slab Reinforced with GFRP Bars**
Plemic, P., Andrews, B.
- 194 **Interfacial cohesive material law for SRP strips bonded to concrete**
Carlioni, C., Santandrea, M., Imohamed, I.A.O.
- 205 **Out-of-plane behaviour of TRM strengthened masonry walls**
Kariou, F.A., Trantafyllou, S.P., Bournas, D.A., Koutas, L.M.