

SMAR 2017 Special Session on Strengthening, Monitoring and Life-cycle Assessment of Metallic Structures

organized by Dr. Elyas Ghafoori from Empa, Switzerland

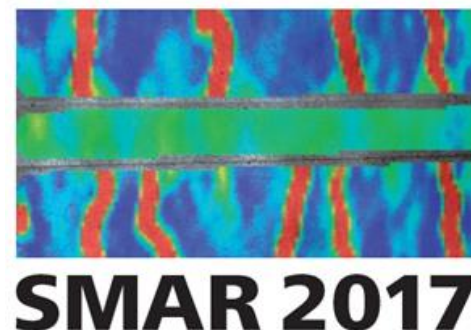
There are a large number of metallic structures, such as railway and highway bridges, offshore structures, pipelines, communication towers and mining equipment, which are aging because of fatigue and corrosion damages. The increasing service loads and harsh environmental conditions make these structures even more vulnerable. Although methods for the strengthening of concrete structures have been already well developed and used in many practical cases, this is not the case for metallic structures. There is clearly a need for studies that aim to develop feasible retrofitting methods, along with simple and safe design approaches, for the strengthening of metallic members.

This special session will share new research results on static and fatigue strengthening of metallic structures using traditional and advanced materials and will provide a platform for researchers to discuss and compare their research results and to enhance future collaboration in this topic. Furthermore, this special session covers the following topics and also other related topics:

- Research related to strengthening of metallic members using carbon fiber-reinforced polymer (CFRP) (e.g., debonding, surface preparation, pre-stressing methods) and shape memory alloy (SMA) materials.
- Rehabilitation of steel-concrete composite structures and strengthening of thin-walled metallic structures against local buckling.
- Life-cycle assessment and management of existing metallic bridges.
- Structural health monitoring (SHM) of metallic structures.
- Experimental, numerical and analytical studies on fatigue strengthening of critical details (e.g., riveted, welded or cracked metallic details).

Please submit your abstract in <http://conf.empa.ch/smar2017>. When submitting your abstract, please select the name of this special session from the list of "Topic Areas".

Fourth Conference on Smart Monitoring,
Assessment and Rehabilitation of Civil Structures
SMAR 2017, Zurich /Switzerland
13 –15 September 2017
ETH Zurich
Conference website: www.smar2017.org



Münchenstein railway bridge (120-years-old) in Switzerland

Key dates:

Submission of Abstracts:
31 December 2016

Submission of Full Papers:
31 March 2017

Submission of Final Revised Papers:
31 July 2017

SMAR 2017 Conference:
13 –15 September 2017



Fatigue strengthening of the cross-girders of Münchenstein Bridge using pre-stressed CFRP laminates



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Materials Science and Technology