IABMAS 2012

The Sixth International Conference on
Bridge Maintenance, Safety and Management
Stresa, Lake Maggiore, Italy | July 8-12, 2012

Draft Conference Program

(June 12th, 2012)

Conference Program Overview

Time		JULY 8th (SUN)	JULY 9th (MON)			JULY 10th (TUE)			JULY 11th (WED)		JULY 12th (THU)
7.00	8.00			Registration		Registration			Registration		
8.00	8.30			Opening Ceremony					Keynote Lectures		
8.30	9.00					Keynote Lectures					
9.00	9.30		Registration	T.Y Lin Lecture	Exhibition				T.Y. Lin Special Session		Boat Tours
9.30	10.00			Keynote Lectures							
10.00	10.30						Registration				
10.30	11.00			Coffee Break		Coffee Break			Coffee Break		
11.00	11.30										
11.30	12.00			MoM Sessions		TuM Sessions			WeM Sessions		
12.00	12.30							Exhibition			
12.30	13.00										
13.00	14.00			Lunch		Lunch			Lunch		
14.00	14.30										
14.30	15.00			MoA Sessions		TuA Sessions			WeA Sessions		
15.00	15.30										
15.30	16.00										
16.00	16.30			Coffee Break		Coffee Break			Coffee Break		
16.30	17.00		Registration								
17.00	17.30			MoE Sessions		TuE Sessions			WeE Sessions		
17.30	18.00										
18.00	18.30					General Assembly			Closing Ceremony		
18.30	19.00										
19.00	19.30										
19.30	20.00		Welcome Reception								
20.00	21.00										
21.00	22.00					Gala Dinner					
22.00	23.00										

08:15 - 09:00	Opening Ceremony (Auditorium)
	Welcome Speeches
	Program TBD
09:00 - 09:30	T.Y.Lin Lecture (Auditorium)
	Frieder SEIBLE: *Precast segmental bridge construction in seismic zones*
09:30 - 10:30	Keynote Lectures (Auditorium)
	Man-Chung TANG: *The art of arches*
	Giorgio DIANA: *Wind tunnel: a fundamental tool for long span bridges design*
10:30 - 11:00	Coffee Break (Regina Palace Garden)
11:00 - 13:00	Concurrent Technical Sessions

	MoM-1 (Auditorium)	*Sustainability Assessment of Bridges*
	MoM-2 (Magnolia)	*Risk-based and Disaster Resilience Analysis of Bridge Systems and Networked Infrastructures under Multiple Hazards*
	MoM-3 (Azalea)	*Structural Control of Bridges and Footbridges: Extreme and Every-day Events*
	MoM-4 (Orchidea)	*Reliability Analysis of Bridge Structures (1)*
	MoM-5 (Gardenia)	*Operation and Maintenance of Major Landmark Bridges*
	MoM-6 (Ortensia)	*Brick and Stone Masonry Bridge Safety and Durability*
	MoM-7 (Mimosa)	*Recent Advances in Bridge Health Monitoring*
	MoM-8 (Camelia)	*TEAM: A Marie Curie Training Network on Bridge Management Sustainability Assessment of Bridges*

13:00 - 14:00	Lunch (Regina Palace Liberty Hall)
14:00 - 16:00	Concurrent Technical Sessions

	MoA-1 (Auditorium)	*Strengthening of Existing Bridges with FRP Composites (1)*
	MoA-2 (Magnolia)	*SmartEN ITN - Smart Management for Sustainable Built Environment including Bridges and Structural Systems (1)*
	MoA-3 (Azalea)	*Management and Preservation of Long Span Historic Bridges*
	MoA-4 (Orchidea)	*Reliability Analysis of Bridge Structures (2)*
	MoA-5 (Gardenia)	*Bridge Strengthening and Rehabilitation*
	MoA-6 (Ortensia)	*Advances in Modeling and Analysis for Performance-Based Design of Bridge Structures subjected to Multiple Hazards*
	MoA-7 (Mimosa)	*Monitoring and Assessment of Bridges using Novel Techniques (1)*
	MoA-8 (Camelia)	*Bridges for High-Speed Railways*

16:00 - 16:30	Coffee Break (Regina Palace Garden)
16:30 - 18:30	Concurrent Technical Sessions

	MoE-1 (Auditorium)	*Strengthening of Existing Bridges with FRP Composites (2)*
	MoE-2 (Magnolia)	*SmartEN ITN - Smart Management for Sustainable Built Environment Including Bridges and Structural Systems (2)*
	MoE-3 (Azalea)	*Lifetime Design, Assessment, and Maintenance of Super Long-Span Bridges*
	MoE-4 (Orchidea)	*Non Deterministic Schemes for Structural Safety and Reliability of Bridges*
	MoE-5 (Gardenia)	*Seismic Assessment and Retrofit of Bridges*
	MoE-6 (Ortensia)	*Hybrid Composite Bridge System*
	MoE-7 (Mimosa)	*Monitoring and Assessment of Bridges using Novel Techniques (2)*
	MoE-8 (Camelia)	*Bridge Traffic Loading*

08:15 - 09:00	**Opening Ceremony**
	Welcome Speeches
	Program TBD

| 09:00 - 09:30 | **T.Y.Lin Lecture (Auditorium)** |
| | Chairs: TBA |

Precast segmental bridge construction in seismic zones

Frieder SEIBLE
University of California
San Diego, La Jolla, CA, USA

| 09:30 - 10:30 | **Keynote Lectures (Auditorium)** |
| | Chairs: TBA |

The art of arches

Man-Chung TANG
T.Y. Lin International
San Francisco, CA, USA

Wind tunnel: a fundamental tool for long span bridges design

Giorgio DIANA
Politecnico di Milano
Milan, Italy

MoM-1 Auditorium	MoM-2 Magnolia Room	MoM-3 Azalea Room	MoM-4 Orchidea Room
Special Session: **Sustainability Assessment of Bridges**	Special Session: **Risk-based and Disaster Resilience Analysis of Bridge Systems and Networked Infrastructures under Multiple Hazards**	Special Session: **Structural Control of Bridges and Footbridges: Extreme and Every-day Events**	Mini-Symposium: **Reliability Analysis of Bridge Structures (1)**
Chairs: Ulrike Kuhlmann & TBA	*Chairs:* Gian Paolo Cimellaro & Leonardo Dueñas-Osorio	*Chairs:* Luca Martinelli & Marco Domaneschi	*Chairs:* Franck Schoefs & Francesca Lanata
Life cycle assessment for representative steel and composite bridges *T. Beck, M. Fischer & M. Pfaffinger*	Road network's disaster resilience assessment methodology *V. Arcidiacono, G.P. Cimellaro, A. Infuso & A.M. Reinhorn*	Seismic protection of the ASCE updated cable-stayed bridge benchmark with RNC passive devices *G. Carusone, M. Domaneschi, L. Martinelli, M. Ismail & J. Rodellar*	Updating the reliability of existing PC bridge girders by incorporating spatial variations *M. Akiyama, D.M. Frangopol & I. Yoshida*
Life cycle analysis of highway composite bridges *H. Gervásio, L. Simões da Silva, V. Perdigão, P. Barros, A. Orcesi & K. Nielsen*	Probabilistic functionality recovery model for resilience analysis *P. Bocchini, A. Decò & D.M. Frangopol*	Seismic performance of a wind designed control strategy on a suspension bridge *M. Domaneschi & L. Martinelli*	Estimating the remaining service life of a historical railway bridge *P. Basso, S. Casciati & L. Faravelli*
Quantification of sustainability principles in bridge projects *C. Hendy & R. Petty*	Seismic vulnerability of shallow buried rectangular structures *E. Debiasi, A. Gajo & D. Zonta*	Structural control of a wind excited suspension bridge model accounting for motion induced wind forces *M. Domaneschi & L. Martinelli*	Segmentation and condition rating of concrete bridge decks using NDE for more objective inspection and rehabilitation planning *N. Gucunski, A. Maher, H. Ghasemi & F.S. Ibrahim*
The proposed damage model and mechanical behaviors of damaged short suspenders in arch bridges *Y.B. Li & Q.W. Zhang*	Accounting for bridge condition and correlation estimates in the seismic reliability analysis of aging transportation networks *J. Ghosh, K. Rokneddin, J.E. Padgett & L. Dueñas-Osorio*	Detailed numerical and experimental dynamic analysis of long-span footbridges to optimize structural control measures *C. Meinhardt*	Effect of ASR on steel-concrete bond behavior in the lap-splice region of bridge columns *Q. Huang, P. Gardoni, A. Pagnotta & D. Trejo*
Steel-composite bridges – Holistic approach applied to European case studies *P. Maier, U. Kuhlmann, Y. Tardivel, N. Robert, J. Raoul, V. Perdigão, N. Martins, P. Barros, H. Friedrich & J. Krieger*	Lifetime risk assessment of bridges affected by multiple hazards *A. Decò & D.M. Frangopol*	Elaboration of the vibration comfort criteria for footbridges during vibrations induced by pedestrians *M. Pantak*	A probabilistic approach for the quantification of structural robustness *N. Kagho, A. Orcesi & C. Cremona*
Optimizing bridge design by improved deterioration models through fatigue tests *P. Maier, U. Kuhlmann, N. Popa & R. Willms*	The broad impact of disaster risk mitigation based on IT solutions *G.M. Atanasiu & F. Leon*	Spectral analysis of dynamic response of footbridges to random pedestrian loads *M. Gladysz & W. Zielichowski-Haber*	Reliability analysis of highway bridge structures considering ultimate load effects *L.A. McCarthy & C.C. Caprani*
German approach to a holistic assessment of steel and composite bridges *P. Maier, U. Kuhlmann, H. Friedrich, J. Krieger, M. Pfaffinger & M. Mensinger*	Application of risk analysis for the preservation of post-tensioned girder bridge decks *C. Cremona, G. Lacoste, P. Corfdir, S. Neiers, C. Aubagnac, E. Delahaye, C. Marcotte & P. Paillusseau*	Stochastic model of continuously measured vertical pedestrian loads *V. Racic, J.M.W. Brownjohn & A. Pavic*	Reliability-based analysis of the progressive collapse of bridges *F. Miao & M. Ghosn*
Experimental and analytical studies on fatigue strength of corroded bridge wires *S. Nakamura & K. Suzumura*		Dynamic response analyses for human-induced lateral vibration on footbridges *M. Yoneda*	Reliability assessment of concrete bridges *D. Novák, B. Teplý, R. Pukl & A. Strauss*
The social dimension of bridge sustainability assessment - Impacts on users and the public *T. Zinke, T. Ummenhofer, M. Pfaffinger & M. Mensinger*			

MoM-5 Gardenia Room	MoM-6 Ortensia Room	MoM-7 Mimosa Room	MoM-8 Camelia Room
Special Session: **Operation and Maintenance of Major Landmark Bridges**	Mini-Symposium: **Brick and Stone Masonry Bridge Safety and Durability**	Special Session: **Recent Advances in Bridge Health Monitoring**	Special Session: **TEAM: A Marie Curie Training Network on Bridge Management**
Chairs: Jens Sandager Jensen & TBA	*Chairs:* Andrea Benedetti & Lorenzo Jurina	Chairs: Christian F. Cremona & André D. Orcesi	Chairs: Ciaran McNally & TBA
Optimal maintenance of major bridges *M.L. Bloomstine*	Patch loading of longitudinally stiffened webs *A. Benedetti & F. Dall'Aglio*	Perturbation based stochastic model updating methods for the evaluation of structural modifications *R. Biyoghe, D. Clair & M. Fogli*	Evaluation of time-dependent chloride parameters for assessing reinforced concrete bridges *A. Attari, C. McNally & M.G. Richardson*
Maintenance of bridge cable systems *J. Laigaard, O. Sørensen & N. Bitsch*	Masonry bridges: static and dynamic response through reduced scale models *A. Brencich*	Supervised learning algorithms for damage detection and long term bridge monitoring *C. Cremona, A. Cury & A. Orcési*	Prediction of moment redistribution and influence of rotation capacity in reinforced concrete beams *N. Bagge, C. Pedersen & A. O'Connor*
Reliability based inspection and reliability centered maintenance *P. Linneberg, M. Zinck & K.V. Christensen*	Strengthening effectiveness of ancient masonry bridge *N. Gattesco, R. Franceschinis, V. Kristek, A. Kravtsov & J. Rimal*	Bridge characterization and structural health monitoring: a suspension bridge case study *A. Houel, A. Orcési & R. Leconte*	Load effect of multi-lane traffic simulations on long-span bridges *C.C. Caprani, A. Lipari & E.J. OBrien*
Maintenance of long span bridges *D.K. MacKenzie & B. Colford*	Strengthening of arch masonry bridges with "RAM" – Reinforced Arch Method *L. Jurina*	DynaMo – software for vibration based structural health monitoring *F. Magalhães, S. Amador, Á. Cunha & E. Caetano*	Comparison of electromagnetic non-destructive evaluation techniques for the monitoring of chloride ingress in cover concrete *R. du Plooy, S. Palma Lopes, G. Villain, X. Dérobert, B. Thauvin & C. Lestréhan*
A structural health monitoring systems for long span bridges *D.K. MacKenzie, N. Apaydin & O. Akkol*	Remedial works and repairs of Prague's historical Charles Bridge *V. Krížek, V. Krístek & J. Rímal*	Structural monitoring of the Tacony-Palmyra Bridge using video and sensor integration for enhanced data interpretation *M.T. Yarnold, F.L. Moon, A.E. Aktan & B. Glisic*	TEAM – a Marie Curie approach to bridge management *C. McNally*
Humber Bridge A-frame refurbishment / replacement S.R. Hornby, *J.H. Collins*, P.G. Hill & J.R. Cooper	Structural assessment of the railway masonry arch bridge crossing the Reno river in Bologna *C. Mazzotti, S. de Miranda, G. Castellazzi & F. Carrea*	Cameras as displacement sensors to get the dynamic motion of a bridge: performance evaluation against traditional approaches G. Busca, *A. Cigada*, P. Mazzoleni, E. Zappa & M. Franzi	Estimation of lifetime maximum distributions of bridge traffic load effects E.J. OBrien, *D. Hajializadeh*, E. Sheils & B. Enright
Control of traffic loads on Great Belt Bridge *J. Laigaard*, N. Bitsch, H. Gjelstrup & K.A. Nielsen	Investigation and upgrading of a historical multispan arch masonry bridge *An. Paeglitis & Ai. Paeglitis*	Targetless precision monitoring of road and rail bridges using video cameras *P.W. Waterfall*, J.H.G. Macdonald & N.J. McCormick	Fatigue assessment of bridges using realistic train models *A. Ottosson,* C. Pedersen & A. O'Connor
Variability in dynamic characteristics of the Sutong cable-stayed bridge under routine traffic conditions J. Liu & *Q. Zhang*	Static and seismic retrofit of masonry arch bridges: case studies *G. Tecchio, F. Da Porto, P. Zampieri, C. Modena & C. Bettio*	Use of structural monitoring in simulation of train-bridge interaction *R. Kiviluoma & H. Yli-Villamo*	A monitoring system for determination of real deck slab behaviour in prestressed box girder bridges *M.A. Treacy & E. Brühwiler*
			Extrapolation of traffic data for development of traffic load models: assessment of methods used during background works of the Eurocode *X.Y. Zhou, F. Schmidt & B. Jacob*

MoA-1 Auditorium	MoA-2 Magnolia Room	MoA-3 Azalea Room	MoA-4 Orchidea Room
Mini-Symposium: **Strengthening of Existing Bridges with FRP Composites (1)**	Mini-Symposium: **SmartEN ITN - Smart Management for Sustainable Built Environment including Bridges and Structural Systems (1)**	Special Session: **Management and Preservation of Long Span Historic Bridges**	Mini-Symposium: **Reliability Analysis of Bridge Structures (2)**
Chairs: Carlo Pellegrino & TBA	*Chairs:* Toula Onoufriou & Rosemarie Helmerich	*Chairs:* Emin Aktan & Franklin Moon	*Chairs:* Franck Schoefs & Francesca Lanata
Open issues in design procedures for FRP strengthening of reinforced concrete bridges *C. Pellegrino*	SmartEN – Smart management for sustainable built environment including bridges, structures and infrastructure systems *T. Onoufriou, M.A. Kyriakides, K. Berberidis, M. Chryssanthopoulos & A. Kalis*	Preservation and management of historic landmark bridges that remain essential as critical infrastructure elements *I. Bartoli & A.E. Aktan*	Probabilistic load-modelling and reliability-based load-rating for existing bridges *S.G. Reid & N. Yaiaroon*
Bond of FRP strengthening systems for concrete structures: a round Robin test *M. Guadagnini, A. Serbescu, A. Palmieri, S. Matthys, A. Bilotta, E. Nigro, C. Mazzotti, G. Sas, B. Taljsten, F. Ceroni, C. Czaderski, S. Olia, Z. Szabo, G. Balazs, J. Barros, I. Costa & V. Tamuzs*	Power-efficient wireless sensor reachback for SHM *D. Ampeliotis, N. Bogdanovic, K. Berberidis, F. Casciati & R. Al-Saleh*	Knowledge management for aging infrastructure *E. Jackson, E. Richter, P.L. Gurian, A. Pradhan, E. Aktan & F. Moon*	Reliability of bridge deck subject to random vehicular and seismic loads through subset simulation *D. Sen, B. Bhattacharya & C.S. Manohar*
Behaviour of FRP confined concrete cylinders under different temperature exposure *M.N.S. Hadi & B.A. Louk Fanggi*	Structural diagnostic via compressive sensing *F. Casciati, L. Faravelli, R. Al-Saleh & K. Hinc*	Maintaining and preserving long span signature structures *D.S. Lowdermilk, G. Nyikita & J. Jeffers*	Extreme value distribution model of vehicle loads incorporating de-correlated tail fitting and stationary gamma process *L. Shunlong, L. Hui, Z. Fujian, G. Yiming & Z. Guo*
Bond behavior and failure mechanisms of EBR made of UHM carbon fibers *F. Jesse, W. Stremmel & M. Curbach*	Towards a SHM-based methodology for updating fatigue reliability of orthotropic steel decks *I.F. Alcover, J.E. Andersen, M.K. Chryssanthopoulos & M.I. Rafiq*	iCOMPASS: an integrated approach in performance-based management of infrastructures *E. Minaie, M. DePriest, N. Dubbs, F.L. Moon, A.E. Aktan, P. Adams & S. Ozalis*	Probabilistic performance assessment of concrete structures subjected to corrosion process *A. Strauss, R. Wendner, K. Bergmeister, B. Teplý & D. Novák*
Comparative behaviour of FRP confined square concrete columns under eccentric loading *X. Lei, T.M. Pham & M.N.S. Hadi*	Low cost wireless sensor networks for continuous bridge monitoring *B. Han, A. Kalis, P. Tragas, R.H. Nielsen & R. Prasad*	Evaluation of a long-span steel tied arch bridge using temperature-based structural identification *M.T. Yarnold, F.L. Moon, N.C. Dubbs & A.E. Aktan*	Detailed comparison between ASR/LFR and LRFR for reinforced concrete highway bridges *H. Toutanji, D. Wang & R. Vuddandam*
Influence of the axial stiffness of the reinforcement on the FRP-concrete interface's fracture energy *C. Mazzotti*	Knowledge representation system about existing bridges *R. Helmerich*	The reconstruction of the Williamsburg Bridge in New York City *R.D. Csogi*	Structural reliability analysis of deteriorating RC bridges considering spatial variability *T.V. Tran, E. Bastidas-Arteaga, F. Schoefs, S. Bonnet, A.J. O'Connor & F. Lanata*
Flexural tests on GFRP RC slabs: experimental results and numerical simulations *E. Nigro, A. Bilotta, G. Cefarelli, G. Manfredi & E. Cosenza*	Performance indicators based on structural health monitoring for management of bridges *A.D. Orcesi & D.M. Frangopol*	Contribution of the FBG based monitoring to the rehabilitation of a centenary steel bridge *C. Rodrigues, F. Cavadas, C. Félix & J. Figueiras*	Probabilistic seismic response of a bridge-soil-foundation system under the combined effect of vertical and horizontal ground motions *Z. Wang, J.E. Padgett & L. Dueñas-Osorio*
Stress analysis method for steel plate multilayered CFRP under uniaxial loading *T. Miyashita & M. Nagai*	NDT-based monitoring of accelerated steel corrosion in concrete *S.-X. Hong, W.L. Lai, R. Helmerich & B. Milmann*	Renovation of a heritage protected suspension bridge with replacement of key components and provision of seismic protection *T. Spuler & G. Moor*	Reliable damage detection and localization using direct strain sensing *Y. Yao & B. Glisic*
			Bayesian networks for post-earthquake assessment of bridges *Y.C. Yue, M. Pozzi, D. Zonta & R. Zandonini*

MoA-5 Gardenia Room	MoA-6 Ortensia Room	MoA-7 Mimosa Room	MoA-8 Camelia Room
General Session: **Bridge Strengthening and Rehabilitation**	Special Session: **Advances in Modeling and Analysis for Performance-Based Design of Bridge Structures subjected to Multiple Hazards**	Mini-Symposium: **Monitoring and Assessment of Bridges using Novel Techniques (1)**	Special Session: **Bridges for High-Speed Railways**
Chairs: TBA	Chairs: Francesco Petrini & Alessandro Palmeri	Chairs: Alfred Strauss & TBA	Chairs: Rui Calçada & TBA
Design of externally plated RC beams in bridging applications *S. Aliamiri & M. Raoof*	Performance-based design of bridge structures subjected to multiple hazards: a review *F. Petrini & A. Palmeri*	Experimental study on bridge scour monitoring system *C.C. Chen, S.C. Wong, K.C. Chang & C.Y. Lin*	Analysis of lateral dynamics of railway vehicles on viaducts with coupled models *J.M. Goicolea, P. Antolín & J. Oliva*
Structural assessment of Bullona 1929 railway bridge station to double span by external post-tensioning *C. Beltrami, C. Silvestri & G. Pedrazzi*	Numerical simulation of bridges remodeling *A. Marí, J. Bairán, R. Moreno, E. Oller & J.J. Álvarez*	Subsequent anchorage of transverse prestressing cables in bridge decks *Ch. Fust, P. Mark & M. Wolff*	Dynamic interaction between rails and structure in a composite bridge of 120 m length *C. Jurado*
Reinforcement of structural elements by the use of composite materials and external prestressing *E. De Angelis, F. Incelli, B. Rinaldi & S. Mancini*	Structural response of bridges to fire after explosion *C. Crosti, P. Olmati & F. Gentili*	Bridge management system: challenges of adopting a bridge management system appropriate to the needs of a local authority. Example from the United Kingdom *B. Kamya*	Investigation of major dynamic responses in the high-speed railway bridges for KTX *B.S. Kim, W.J. Chin, E.S. Choi & J.W. Kwark*
Bridge strengthening by network arch: structural performance and design criteria *M.A. Valenzuela & J.R. Casas*	The performance-based evaluation of kinematic pile response due to lateral spread at an historic bridge in Costa Rica *K.W. Franke & K.M. Rollins*	Optimized monitoring concepts for arch bridges *A. Krawtschuk, A. Strauss, K. Bergmeister & R. Wendner*	The vertical acceleration on a bridge deck for riding stability of high-speed train *J.W. Kwark, H.J. Yoon, W.J. Chin & B.S. Kim*
Strengthening of box girders using adaptive "tube-in-tube" concepts *M. Empelmann, D. Busse, S. Hamm, M. Girmscheid & T. Zedler*	Finite element analysis of innovative solutions of precast concrete beam-column ductile connections *A. Saviotti, P. Olmati & F. Bontempi*	Advantages of radar interferometry for assessment of dynamic deformation of bridge *P. Kuras, T. Owerko, L. Ortyl, R. Kocierz, O. Sukta & S. Pradelok*	Train-bridge interaction effects on the dynamic response of a small span high-speed railway bridge *J. Rocha, A.A. Henriques & R. Calçada*
Executive extremely urgent project for the rehabilitation of vehicular and pedestrian traffic of the bridge over Corace river in Gimigliano municipality *E. Siviero & A. Stocco (A. Totaro)*	Reliability analysis and in-field investigation of a r.c. bridge over river Adige in Verona, Italy *F. Carturan, K. Islami, C. Pellegrino & C. Modena*	Combined use of ground penetrating radar and laser scanner for bridge health assessment *M. Marelli, G. Lommori & S. Oppioni*	Fatigue analysis of precast girder webs in railway bridge deck *C. Sousa, J. Rocha, R. Calçada & A.S. Neves*
Lessons learned from the Little Lake Harris Bridge settlement restoration project 736 *M. Hassan, A. Sallam & D. Thompson*	Prediction of service performance for RC bridge by considering the coupling effect of load-environment in service cycle *T. Guobin, X. Yiqiang & W. Qiangqiang*	Monitoring based assessment of a jointless bridge *A. Strauss, A. Krawtschuk, R. Wendner, D.M. Frangopol & K. Bergmeister*	Bridge/train interaction analysis of a suspension bridge subjected to seismic loads *K. Sungil & K. Jongwon*
Assessment procedures and strengthening of an existing metal bridge *A. Pipinato*	Innovative numerical modeling to investigate local scouring problems induced by fluvial structures *R. Guandalini, G. Agate, S. Manenti, S. Sibilla & M. Gallati*	Laser vibrometry for bridge post-repair investigation *M. Schmieder, A. Taylor-Noonan, R. Heere & S.E. Chen*	Inspection and evaluation of steel bridges from a high-speed railway network *Ph. Van Bogaert*
Probabilistic modeling of reinforced concrete bridge repair deterioration in marine environments *P.C. Ryan & A. O'Connor*		Rapid non-contact tension force measurements on stay cables *M. Schmieder, A. Taylor-Noonan & R. Heere*	Great marquee for high-speed trains in the new railway station of Málaga *C. Jurado*

Concurrent Technical Sessions (MoE-1 to MoE-4)		16:30-18:30 | Monday Evening, July 9th, 2012	
MoE-1 Auditorium	**MoE-2** Magnolia Room	**MoE-3** Azalea Room	**MoE-4** Orchidea Room
Mini-Symposium: **Strengthening of Existing Bridges with FRP Composites (2)**	Mini-Symposium: **SmartEN ITN - Smart Management for Sustainable Built Environment Including Bridges and Structural Systems (2)**	Mini-Symposium: **Lifetime Design, Assessment, and Maintenance of Super Long-Span Bridges**	Special Session: **Non Deterministic Schemes for Structural Safety and Reliability of Bridges**
Chairs: TBA	Chairs: TBA	Chairs: Hyun-Moo Koh & Soobong Shin	Chairs: Stefania Arangio & TBA
Finite element modelling of beams strengthened with FRP sheets during short and long-term loads *G. Mazzucco, V.A. Salomoni, C. Majorana & C. Pellegrino*	Wisespot, a novel approach for wireless localization of damages in bridges *A. Kounoudes, M. Milis, T. Onoufriou, R. Votsis, A. Kalis, P. Tragas & A.G. Constantinides*	Modeling of truck traffic for long span bridges *E.-S. Hwang, K.-T. Lee & D.-Y. Kim*	Redundancy of highway bridge decks *G. Anitori, J.R. Casas & M. Ghosn*
Effect of FRP retrofit interventions on seismic vulnerability of existing bridges *R. Morbin, E. Casadei, C. Pellegrino & C. Modena*	Physical characterization of reinforcing bar corrosion in concrete *L. Llano, M.I. Rafiq & M.K. Chryssanthopoulos*	Analytical prediction of lateral-torsional buckling of long-span suspension bridge *H. Katsuchi, H. Yamada & K. Hasegawa*	Bayesian neural networks for damage identification of a cable-stayed bridge *S. Arangio & F. Bontempi*
Ultimate limit state of MF-FRP beams *F. Nardone, G.P. Lignola, A. Prota, G. Manfredi & A. Nanni*	Physical layer network coding for bridge wireless monitoring *A.M. Mejri, G.R. Rekaya & J-C.B. Belfiore*	Application of vision-based monitoring system to stay cables *S.W. Kim, N.S. Kim & Y.M. Kim*	Dynamic load allowance for capacity rating of prestressed concrete girder bridges based on reliability studies *L. Deng, C.S. Cai & M. Barbato*
Strength and behavior of anchoring devices of CFRP rods for steel girder strengthening *K. Nozaka, A. Tsukiyama, M. Matsumura, N. Ochi, T. Ishikawa & N. Hisabe*	Bi-objective layout optimization of a wireless sensor network for footbridge monitoring *K. Jalsan, K. Flouri & G. Feltrin*	Wireless impedance sensor node for structural health monitoring of cable-anchorage subsystem *J.-T. Kim, K.-D. Nguyen & P.-Y. Lee*	Strength and reliability of FRP-reinforced concrete beams *S.E.C. Ribeiro & S.M.C. Diniz*
Strengthening of bridges with pretensioned FRP laminates: experimental investigation and a case study *C. Pellegrino & G. Giacomin*	Monitoring of bridge using a wireless sensor network based on network coding *J. Skulic & K.K. Leung*	Field loading test for evaluation of load bearing capacity of a cable-stayed bridge *Y.-M. Kim, S.-H. Shin, J. Lee & J.-H. Jang*	Back analysis for earthquake damaged bridges. Part I : general procedure *P.E. Sebastiani, P. Franchin, F. Petrini & F. Bontempi*
A new composite section for strengthening orthotropic steel decks *R. Sarkhosh, A. Romeijn, C.Q. Klap & R. Sterkman*	Optimization of wireless sensor locations for SHM based on application demands and networking limitations *R.N. Soman, T. Onoufriou, R.A. Votsis, C.Z. Chrysostomou, M.A. Kyriakides*	A vision-based damage detection of cable exterior in cable-stayed bridges *J.-J. Lee, K.-D. Kim & H.-N. Ho*	Back analysis for earthquake damaged bridges. Part II : application to a viaduct damaged in the April 6th, 2009 L'Aquila earthquake *P.E. Sebastiani, P. Franchin, F. Petrini & F. Bontempi*
Prediction of the interfacial shear stress with critical stress state criterion for externally bonded FRP-to-concrete substrate *H. Toutanji, S. Ueno & R. Vuddandam*	Estimation of Markovian deterioration models for bridge management *T. Liu & J. Weissmann*	Long-term monitoring for dynamic properties on a suspension bridge under wind-induced vibration *D.U. Park, N.S. Kim, J.H. Cheung & H.K. Kim*	Comparisons of four time-dependent reliability approaches for safety assessment of deteriorated concrete bridges *D.G. Lu, X.P. Fan & W. Jiang*
Strengthening of multi-storey parking by bridge engineering means *G. Lagoda, M. Lagoda & J. Ciesla*	Bridge maintenance planning using cross-entropy and non-stationary Markov chains *T.M. Reale & A.J. O'Connor*	Real-time steel cable NDE for corrosion defects using E/M sensors installed in a cable climbing robot *S. Park, J.-W. Kim, M.-J. Nam, J.-J. Lee & H.N. Ho*	Practical aspects of imposed autocorrelation and probabilistic nonlinear modeling *J. Podrouzek & A. Strauss*
		Buffeting responses of a cable-stayed bridge during the typhoon Kompasu *J. Park, H.-K. Kim, H.S. Lee, H.-M. Koh & S. Cho*	
		Vibration-based BHMS for long-span bridges considering environmental actions *S. Shin, H. Kim, Y. Kim & J.C. Park*	

Concurrent Technical Sessions (MoE-5 to MoE-8)		16:30-18:30 | Monday Evening, July 9th, 2012	
MoE-5 Gardenia Room	**MoE-6** Ortensia Room	**MoE-7** Mimosa Room	**MoE-8** Camelia Room
General Session: **Seismic Assessment and Retrofit of Bridges**	Special Session: **Hybrid Composite Bridge System**	Mini-Symposium: **Monitoring and Assessment of Bridges using Novel Techniques (2)**	General Session: **Bridge Traffic Loading**
Chairs: TBA	Chairs: Hitoshi Furuta & Sang-Hyo Kim	Chairs: TBA	Chairs: TBA
Displacement fragility curves for bridges with medium length *B.A. Olmos, J.M. Jara & M. Jara*	Partial interaction analyses of composite steel-concrete girders subjected to combined bending and shear *P. Ansourian, G. Ranzi & A. Zona*	Modeling and structural health monitoring of a geriatric signature movable bridge *E. Minaie, F.L. Moon & A.E. Aktan*	Lane changing control to reduce traffic load effect on long-span bridges *C.C. Caprani, B. Enright, & C. Carey*
A displacement-based procedure for seismic assessment of reinforced concrete bridges *A.M. Paksoy & L. Petrini*	Study on crack inspection of in-service steel structure by EPDM *K.H. Chang, D.N.V. Vuong, S.H. Hyun, C.H. Lee, M. Hirohata & Y.C. Kim*	Advanced methods for estimating the natural frequency and the damping from monitoring data of structures *M. Österreicher, A. Strauss & K. Bergmeister*	Truck weight limits on concrete bridges regarding ultimate limit bending moment using reliability theory *L.M. Ferreira, M.K. El Debs & A.L.H.C. El Debs*
Optimal seismic retrofit strategy selection of deteriorating concrete structures *N.A. Ni Nuallain & A. O'Connor*	Seismic performance evaluations of bridge-pier system with uncertainty *T. Iida, D. Lim & K. Kawano*	Stress measurement and material defect detection in steel strands by magneto elastic effect. Comparison with other non-destructive measurement techniques *A.M. Sarmento, A. Lage, E. Caetano & J. Figueiras*	Newest development of concrete safety barriers for bridges and the need to harmonize national collision force regulations *A. Bares, T. Edl, G. Ferner & A. Barnaš*
Shear strengthening of columns in existing bridges *T. Isakovic, M. Fischinger, Z. Vidrih & A. Bevc*	Applications of hybrid system with Perfobond rib shear connector *S.-H. Kim, C.-Y. Jung, J.-Y. Joung & J.-H. Ahn*	Linearity assumptions in design: soil-structure interaction *R. Wendner, A. Strauss & T. Zimmermann*	A comparative study of bridge traffic load effect using micro-simulation and Eurocode load models *A. Lipari, E.J. OBrien & C.C. Caprani*
A simplified procedure to evaluate seismic vulnerability of R.C. circular bridge piers *M. Mezzina, F. Palmisano & D. Raffaele*	Fundamental study on rigid connection detail of steel-concrete composite rigid frame bridge using bearing plat *K. Tani, T. Yamada, D. Sagou, T. Yamaguchi & Y. Kawamoto*	Extreme value statistics for the life-cycle assessment of masonry arch bridges *T. Zimmermann, A. Krawtschuk, A. Strauss & R. Wendner*	Evaluation of Eurocode damage equivalent factor based on traffic simulation *N. Maddah & A. Nussbaumer*
Seismic vulnerability and retrofitting of "Gioieni bridge" in Catania using innovative materials *L. Anania, A. Badalà, S. Costa & G. D'Agata*	Fatigue crack detection of steel truss bridge by using mechanoluminescent sensor *N. Terasaki, C.-N. Xu, C. Li, L. Zhang, Y. Sakata, N. Ueno, C.-N. Xu, K. Yasuda, L.H. Ichinose*	Using internal electrical resistivity measurements as a tool for structural health monitoring *N.H. El-Ashkar, M.I.S. Elmasry & M.F.A. Alasadi*	A practical overweight permit analysis system in Seoul *A.H.M. Park, B.J.K. Lim, C.Y.M. Chon & D.S.H. Kim*
Expected seismic performance of irregular isolated bridges *J.M. Jara, M. Jara, B.A. Olmos, D. Villanueva & H. Varum*	Uncertainty evaluation of the behavior of a composite beam *J.C. Matos, I.B. Valente, P.J.S. Cruz & L.C. Neves*	Direct and probabilistic interrelationships between half-cell potential and resistivity test results for durability ranking *V. Pakrashi, J. Kelly & A. O'Connor*	A live load control procedure for long-span bridges *N.S. Renehan & C.C. Caprani*
Effects of superstructures on seismic behavior of steel bridge frame piers with circular columns *K. Kinoshita*	Negative moment region composite action of steel-concrete girders with grouped studs *I.-S. Ahn, S.S. Chen, A.J. Aref, J.A. Carpenter & M. Chiewanichakorn*	Noncontact bridge deformation monitoring using laser tracking technology *U.B. Attanayake, A. Servi & H.M. Aktan*	Monitoring of bridges – Detection of traffic loads *C. von der Haar, S. Marx & M. Hansen*

08:30 - 10:30	**Keynote Lectures (Auditorium)**
	Masanobu SHINOZUKA: *Remote monitoring: concept and pilot study*
	Kai-Yuen WONG: *System design and implementation of structural health monitoring system and maintenance management system for marine viaduct bridges*
	Claudio MODENA: *Assessment and retrofitting of existing bridges*
	Túlio BITTENCOURT: *Renewal and rehabilitation of the Brazilian railway bridge infrastructure*
10:30 - 11:00	Coffee Break (Regina Palace Garden)
11:00 - 13:00	**Concurrent Technical Sessions**
	TuM-1 (Auditorium) *Research and Applications in Bridge Health Monitoring (1)*
	TuM-2 (Magnolia) *Advances on Structural Robustness and Redundancy of Bridges*
	TuM-3 (Azalea) *Bridge Maintenance and Management*
	TuM-4 (Orchidea) *Advanced Technologies in Standard Bridge Structures – From Research to Implementation*
	TuM-5 (Gardenia) *Smart SHM and Application to Bridge Condition Assessment and Maintenance (1)*
	TuM-6 (Ortensia) *Steel Bridge Rehabilitation (1)*
	TuM-7 (Mimosa) *Bridge Assessment and Design (1)*
	TuM-8 (Camelia) *Numerical Simulation of Durability of Concrete Bridges*
13:00 - 14:00	Lunch (Regina Palace Liberty Hall)
14:00 - 16:00	**Concurrent Technical Sessions**
	TuA-1 (Auditorium) *Research and Applications in Bridge Health Monitoring (2)*
	TuA-2 (Magnolia) *Life-Cycle Design & Assessment of Bridges exposed to Corrosion and other Hazards (1)*
	TuA-3 (Azalea) *Field Tests for Bridge Assessment*
	TuA-4 (Orchidea) *Fatigue Assessment and Design of Bridges*
	TuA-5 (Gardenia) *Smart SHM and Application to Bridge Condition Assessment and Maintenance (2)*
	TuA-6 (Ortensia) *Steel Bridge Rehabilitation (2)*
	TuA-7 (Mimosa) *Bridge Assessment and Design (2)*
	TuA-8 (Camelia) *Bridge Material Properties and Durability*
16:00 - 16:30	Coffee Break (Regina Palace Garden)
16:30 - 18:00	**Concurrent Technical Sessions**
	TuE-1 (Auditorium) *Research and Applications in Bridge Health Monitoring (3)*
	TuE-2 (Magnolia) *Life-Cycle Design & Assessment of Bridges exposed to Corrosion and other Hazards (2)*
	TuE-3 (Azalea) *Light Rail Bridges in Chongqing, China*
	TuE-4 (Orchidea) *Advances in Engineering Structure Management in Finland*
	TuE-5 (Gardenia) *Highway Bridges and Viaducts*
	TuE-6 (Ortensia) *Advances in Nondestructive Evaluation and Monitoring of Concrete Bridge Decks*
	TuE-7 (Mimosa) *Wind Effects on Bridges*
	TuE-8 (Camelia) *New Developments on the Bridge Safety, Maintenance and Management in Mexico*
18:00 - 19:00	General Assembly

08:30 - 10:30

Keynote Lectures (Auditorium)
Chairs: TBA

Remote monitoring: concept and pilot study

Masanobu SHINOZUKA
University of California
Irvine, CA, USA

System design and implementation of structural health monitoring system and maintenance management system for marine viaduct bridges

Kai-Yuen WONG
The Government of the Hong Kong Administrative Region
Hong Kong, P.R.C.

Assessment and retrofitting of existing bridges

Claudio MODENA
University of Padua
Padua, Italy

Renewal and rehabilitation of the Brazilian railway bridge infrastructure

Túlio BITTENCOURT
University of São Paulo
São Paulo, Brazil

TuM-1 Auditorium	TuM-2 Magnolia Room	TuM-3 Azalea Room	TuM-4 Orchidea Room
Mini-Symposium: **Research and Applications in Bridge Health Monitoring (1)**	Special Session: **Advances on Structural Robustness and Redundancy of Bridges**	General Session: **Bridge Maintenance and Management**	Special Session: **Advanced Technologies in Standard Bridge Structures – From Research to Implementation**
Chairs: F. Necati Catbas & Joan R. Casas	*Chairs:* Fabio Biondini & TBA	*Chairs:* TBA	*Chairs:* M. Saiid Saiidi & TBA
Experimental load rating of a steel girder bridge using structural health monitoring and modeling *E.S. Bell, P.J. Lefebvre, M. Sanayei, J.D. Sipple, M. Iplikcioglu & B.R. Brenner*	Evaluation of bridge redundancy under lateral loads *G. Anitori, J.R. Casas & M. Ghosn*	A BMS development project with an integrated inspection program *F. Akgül*	Application of shape memory alloys (SMAs) for prevention of bridge deck unseating during hurricane wave and surge loading *N. Ataei, E. McCarthy & J.E. Padgett*
Bridge condition assessment using digital image correlation and structural modeling *E.S. Bell, J.T. Peddle & A. Goudreau*	Enhancement of bridge redundancy to lateral loads by FRP strengthening *G. Anitori, J.R. Casas, M. Ghosn & S. Jurado*	"The Maintenance Manual" in important infrastructural project, from the design up to the implementation after construction *E. Fruguglietti, G. Pasqualato & R. Sagula*	Assessment of a historical railway bridge toward traffic regulation requirements *N. Boumechra, F. Casciati & S. Casciati*
Implementation of Robust Regression Algorithm (RRA) to detect structural change using Fiber Bragg Grating (FBG) data *F.N. Catbas, M. Malekzadeh & I.-B. Kwon*	Assessment of the levels of load-path redundancy in short span steel truss bridges *K.E. Barth, G.K. Michaelson, J.M. Stains, & K.P. Mertens*	Minnesota Department of Transportation new structure information management system *J. Zink, J.K. Shaffer, M.C. Schellhase & B.D. Witter*	Research and application of precast segmental concrete bridge columns in regions of high seismicity *K.-C. Chang, M.-S. Tsai, Y.-C. Ou, P.-H. Wang & G.C. Lee*
Indirect structural health monitoring in bridges: scale experiments *F. Cerda, J.Garrett, J. Bielak, J. Barrera, Z. Zhuang, S. Chen, M. McCann, J. Kovacevic & P. Rizzo*	Lifetime structural robustness of concrete bridge piers in aggressive environment *F. Biondini & D.M. Frangopol*	Bridge management system implementation in Italy: Pontis® and other BMS application in Italy *E. Fruguglietti, G. Pasqualato & E. Spallarossa*	Damping system for stay cables *P. Egger & J. Kollegger*
Bridge pier scouring: a new approach for monitoring. A case in northern Italy *A. Cigada, S. Manzoni, F. Ballio, G. Crotti, G. Rossi & C. Someda*	Robustness assessment of a corroded RC bridge deck *E.S. Cavaco, L.A.C. Neves & J.R. Casas*	The implementation of a bridge management system in Portugal *C.S. Horta & E.C. Lopes*	Shake table testing of a quarter-scale 4-span bridge with composite piers *F. Kavianipour & M. Saiidi*
On the static monitoring of bridges and bridge-like structures *A.E. Del Grosso*	Imperfection sensitivity of hanger of a suspension bridge for different hanger arrangements *M. Inoue*	Approach for the life-cycle management of structures including durability analysis and maintenance planning *P. Furtner & R. Veit-Egerer*	Fatigue behaviour of bridge deck slab elements strengthened with reinforced UHPFRC *T. Makita & E. Brühwiler*
Reliability prediction based on family of models *H.B. Gokce, F.N. Catbas & D.M. Frangopol*	Robustness assessment of suspension bridges *M. Haberland, S. Haß & U. Starossek*	Seismic risk assessment and retrofit design of existing concrete bridges for the Italian highway Savona-Ventimiglia *C. Bafaro, G. Massone, G. Pasqualato, G. Massa & F. Lenti*	Gradient anchorage method for prestressed CFRP strips – Principle and application *J. Michels, C. Czaderski, R. Brönnimann & M. Motavalli*
Automation of concrete bridge deck condition assessment and rehabilitation *N. Gucunski, J. Yi & F. Moon*	Effectiveness of multiple unseating prevention devices for bridges under extreme earthquakes *T.Y. Lee, D.W. Chang & D.C. Dzeng*	Exploring system interdependencies via a multi-disciplinary modeling approach: application to bridge management *E. Andrijcic, S. Chase, Z. Guo & S. Hwang*	Development of an advanced orthotropic steel deck system for long span bridge *C.K. Oh, K.J. Hong & D. Bae*

TuM-5 Gardenia Room	TuM-6 Ortensia Room	TuM-7 Mimosa Room	TuM-8 Camelia Room
Mini-Symposium: **Smart SHM and Application to Bridge Condition Assessment and Maintenance (1)**	Mini-Symposium: **Steel Bridge Rehabilitation (1)**	General Session: **Bridge Assessment and Design (1)**	Special Session: **Numerical Simulation of Durability of Concrete Bridges**
Chairs: Yunfeng Zhang & Hoon Sohn	*Chairs:* Masahiro Sakano & TBA	*Chairs:* TBA	*Chairs:* Airong Chen & TBA
Remote guided wave imaging using wireless PZT excitation and laser vibrometer scanning for local bridge monitoring *Y.K. An, H.M. Song, H.J. Park, H. Sohn & C.B. Yun*	Bearing replacement and strengthening of Forth Road Bridge approach viaducts, UK *B. Colford, M. Chiarello, C. Hendy & J. Sandberg*	Analysis and verification of existing bridge structures *C. Unger & M. Empelmann*	Modeling corrosion-induced longitudinal crack width and its effect on corrosion rate *C. Cao, B.Y.B. Chan & M.M.S. Cheung*
Damage detection for local components of long suspension bridges using influence lines *Z.W. Chen, S. Zhu, Y.L. Xu & Q. Li*	Study on performance evaluation and maintenance management system of weathering steel bridge *J. He, Y.Q. Liu, A.R. Chen & T. Yoda*	Pre-assessment of existing road bridges – New procedure for a rough but quick estimation of the capacity of existing road bridges *M. Hofmann, B. Kühn, H. Frießem, B. Winkler & M. Hoffmann*	Bond slip model for generalized excitation *E. Mazzarolo, T. Zordan & B. Briseghella*
Filtering environmental load effects to enhance novelty detection on cable-supported bridge performance *E.J. Cross, K. Worden, K.Y. Koo & J.M.W. Brownjohn*	Development of fatigue test method and improvement of fatigue life by new functional steel plates for welding of trough rib and deck plate of orthotropic decks *N. Konda, K. Arimochi, M. Nishio, M. Ichimiya, T. Kasugai & S. Kiyokawai*	Live load factors for serviceability limit state of prestressed concrete girder stresses *E.-S. Hwang, S.-M. Kim & S.H. Nguyen*	Optimization of maintenance planning for deteriorating RC bridges. I: Theory *H. Tian, D.M. Frangopol & A. Chen*
System identification using wirelessly acquired vehicle-bridge interaction data from a highway bridge excited by a moving vehicle *J. Kim & J.P. Lynch*	The analysis on the characteristic of fatigue crack in railway plate girder bridge and its retrofit method *S.J. Lee, K.S. Kyung, H.H. Lee & J.C. Jeon*	Partial safety factors for existing reinforced concrete structures *T. Moser, A. Strauss & K. Bergmeister*	Optimization of maintenance planning for deteriorating RC bridges. II: Application *H. Tian, D.M. Frangopol & A. Chen*
Sensor driven prognosis scheme based on moment estimator *Z. Li & Y. Zhang*	Fatigue crack repair using drilled holes and externally bonded CFRP strips *F. Lin, J.G. Sun, H. Nakamura & K. Maeda*	A study on temperature variation of steel box girder for construction of key-segment closure of partially earth-anchored cable-stayed bridges *S.-J. Park, Y.-G. Kim & S.-H. Kim*	Diffusion process and life-cycle analysis of concrete structures *X. Tu & A. Chen*
Develop on-line parameter estimation methods for bridges under changing environment *C.-H. Loh, M.-C. Chen, S.-H. Chao, C.-H. Li*	Performance and durability verification tests on rationalized joint of precast steel-concrete composite deck for replacement of deteriorated highway bridge slab *H. Mizuno, H. Kaido, S. Matsui & T. Sugiyama*	Structural analysis of bridges with time-variant modulus of elasticity under moving loads *H. Aied & A. Gonzalez*	Numerical durability analysis of reinforced concrete bridges with focus on hygro-thermal behavior *F. Cramer, U. Kowalsky & D. Dinkler*
Long-term monitoring of composite girders using optical fiber sensor *Y. Oshima & M. Kado*	Steel plate pre-stressing reinforcement for coped steel girder ends *Y. Nagao, K. Matsumoto, H. Namiki & M. Sakano*	Reliability analysis of footbridge serviceability considering crowd loading *J. Keogh, C.C. Caprani, P. Archbold & P. Fanning*	Further study of chloride penetration in a RC slab sustaining in-service loads *A. Deif, B. Martín-Pérez & B. Cousin*
Assessing the value of alternative bridge health monitoring systems *M. Pozzi & A. Der Kiureghian*	Experimental study on high strength one-side bolted joints *K. Nakajima, H. Suzuki, Y. Kawabe & K. Fujii*	The study on stability of bridge on which heavy military vehicle passes *A. Do Kyoun Kim, B. Jae Uk Lee & C. Young Gu Kang*	Estimation of diffusion coefficient of chloride ions for concrete durability design *B.S. Park, J.W. Seok, J.M. Park, J.-Y. Cho & J.Y. Kim*

TuA-1 Auditorium	TuA-2 Magnolia Room	TuA-3 Azalea Room	TuA-4 Orchidea Room
Mini-Symposium: **Research and Applications in Bridge Health Monitoring (2)**	Mini-Symposium: **Life-Cycle Design & Assessment of Bridges exposed to Corrosion and other Hazards (1)**	Mini-Symposium: **Field Tests for Bridge Assessment**	General Session: **Fatigue Assessment and Design of Bridges**
Chairs: Hitoshi Furuta & TBA	*Chairs:* Fabio Biondini & Jamie Padgett	*Chairs:* Ayaho Miyamoto & Ilkka Hakola	*Chairs:* TBA
A bridge damage detection approach using vehicle-bridge interaction analysis and neural network technique *H. Hattori, X. He, F.N. Catbas, H. Furuta & M. Kawatani*	Damage modeling and nonlinear analysis of concrete bridges under corrosion *F. Biondini & M. Vergani*	Bridge testing, monitoring and condition assessment in Finland *I. Hakola, P. Hradil & M. Halonen*	Fatigue reliability analysis of steel bridge details based on field-monitored data and linear elastic fracture mechanics *T. Guo & Y.W. Chen*
Structural health monitoring and damage detection using AdaBoost technique *H. Hattori, M. Gul, F. N. Catbas & H. Furuta*	Life-cycle analysis of bridges considering historic seismic damage and aging *J. Ghosh, J.E. Padgett & M. Sánchez-Silva*	Field tests for remaining life and load carrying capacity assessment of concrete bridges *A. Miyamoto*	Fatigue design of plated structures using structural hot spot stress approach *M. Heshmati & M. Al-Emrani*
Development of a bridge damage detection approach using vehicle-bridge interaction analysis and soft computing methods *X. He, F. N. Catbas, H. Hattori, H. Furuta, M. Kawatani, T. Hayashikawa & T. Matsumoto*	Structural modeling of corroded reinforced concrete bridge columns *A.S. Rao, M.D. Lepech & A.S. Kiremidjian*	Development of a damage detection system for expansion joints of highway bridges applying acoustic method *Y. Nishikawa, K. Taniguchi, L.H. Ichinose, S. Tsukamoto & T. Yamagami*	Fatigue assessment of a railway bridge detail using dynamic analysis and probabilistic fracture mechanics *B.M. Imam & G. Kaliyaperumal*
Distributed sensing for damage localization *D. Inaudi, R. Belli & D. Posenato*	Ductility behavior of deteriorating reinforced concrete members *A.N. Kallias & M.I. Rafiq*	Smart system of bridge strain monitoring during construction and service *P. Olaszek*	Rate of convergence of measured stress range spectra *J. Leander & R. Karoumi*
A novel image-based approach for structural displacement measurement *Y.F. Ji & Q.W. Zhang*	Impact of corrosion on the seismic vulnerability of multi-span integral concrete bridges *M. Ní Choine, A. O'Connor & J.E. Padgett*	Investigation of displacements of road bridges under test loads using radar interferometry – Case study *T. Owerko, L. Ortyl, R. Kocierz, P. Kuras & M. Salamak*	Fatigue damage assessment of railway steel bridges based on short-term monitoring data *L.C. Meneghetti, R.M. Teixeira, R. Oliveira, T.N. Bittencourt & A.P. Conceição Neto*
Testing and long term monitoring of a pre-cast pre-stressed concrete girder bridge *N.R. Johnson, S.M. Petroff, M.W. Halling & P.J. Barr*	Probabilistic estimation of the initial time of corrosion of reinforced concrete components situated in a marine environment *R.A. Oliveira & T.N. Bittencourt*	Bridge condition assessment for short and medium span bridges by vibration responses of city bus *A. Yabe & A. Miyamoto*	Prediction of fatigue life of reinforced concrete bridges using fracture mechanics *M. Rocha & E. Brühwiler*
Structural diagnosis of bridges using traffic-induced vibration measurements *C.W. Kim, R. Isemoto, K. Sugiura & M. Kawatani*	Effect of corrosion of reinforcement on the coupled shear and bending behaviour of reinforced concrete beam *W.J. Zhu, R. François & D. Coronelli*	Rule-type knowledge discovery from field inspection data for highway bridges based on advanced data mining technique *H. Yagi, A. Miyamoto & N. Tsukamoto*	Fatigue life time assessment of structural steels by use of ductility parameters *I. Schendel & U. Peil*
Modal parameters identification under multi-operational grades and its application to a cable-stayed bridge *Y. Liu & H. Li*	Life cycle assessment of existing steel bridges considering corrosion and fatigue coupled problems *A. Pipinato, C. Pellegrino & C. Modena*	Application of electromagnetic testing to orthotropic steel deck *T. Yamada, A. Shiraishi, M. Okuno, H. Sugiyama, N. Kanjo, S. Tsukamoto & T. Yamagami*	Determination of the mean fatigue limit of a French railway bridge puddle iron by self-heating measurements under cyclic loadings *S. Sire, C. Doudard & S. Calloch*
			Localized bending fatigue behavior of high-strength steel monostrands *J. Winkler, G. Fischer & C.T. Georgakis*

TuA-5 Gardenia Room	TuA-6 Ortensia Room	TuA-7 Mimosa Room	TuA-8 Camelia Room
Mini-Symposium **Smart SHM and Application to Bridge Condition Assessment and Maintenance (2)**	Mini-Symposium: **Steel Bridge Rehabilitation (2)**	General Session: **Bridge Assessment and Design (2)**	General Session: **Bridge Material Properties and Durability**
Chairs: Chunsheng Wang & Daniele Zonta	*Chairs:* TBA	*Chairs:* TBA	*Chairs:* TBA
Streicker Bridge: a two-year monitoring overview *D.H. Sigurdardottir, J.P.S. Afonso, D.L.K. Hubbell & B. Glisic*	Rehabilitation of steel expressway bridge with repeatedly developed fatigue cracks *H. Nakata, Y. Takamura, K. Tokumasu, M. Kawamura, Y. Adachi & M. Sakano*	Structural assessment for high concrete pier with a vertical construction error and suggestion of the improvement measurement *J. Sim, K. Lee, H. Kim, A. Hanif, G. Kim, H. Ju & M. Ju*	Improvement in tensile performance of steel fiber reinforced high strength concrete: influence of fiber shape and sand to aggregate ratio *S.T. Kang, H.W. Cho, J.H. Lee & D.J. Kim*
Decentralized damage diagnosis for beam-like truss structure considering modeling error *Z. Sun & B. Zhou*	Health monitoring via horizontal displacement at the end of steel bridge girders *H. Namiki, T. Kamizono, Y. Otsuka & S. Takahashi*	Ultimate strength interaction of unstiffened steel box members subjected to bending and torsion *K. Kim*	Analysis of normative approaches to service life design for carbonation induced reinforcement depassivation: fib MC-SLD, by50 and LNEC E465 *R.M. Ferreira & E. Vesikari*
Fatigue cracking monitoring and evaluation using smart sensors for steel bridge decks *C. Wang, L. Tian, B. Fu & Y. Zhang*	Analysis on deck replacement plans of tied arch bridge with composite girder *S. Qing-Tian, Z. Ming-gen, W. Chong & D. Bin*	Controlled demolition of damaged bridge decks *L. Della Sala*	Estimation of elastic modulus of reinforcement corrosion products using inverse analysis of digital image correlation measurements for input in corrosion-induced cracking model *B.J. Pease, A. Michel, A.E.A. Thybo & H. Stang*
Steel bridge fatigue crack monitoring with broadband thin-film acoustic emission sensor *C. Zhou & Y. Zhang*	Investigation of the fracture surface of a cast iron finger joint *K. Sakiya, Y. Takamura, T. Yamagami & M. Yamanishi*	Probability-based design of spun concrete bridge piers *R. Kliukas, R. Vadluga & A. Kudzys*	Anchorage capacity of naturally corroded reinforcement in an existing bridge *F. Berg, D. Johansson, K. Lundgren, M. Plos & K.Z. Hanjari*
Structural health monitoring-based finite element model of Stonecutters Bridge *S. Zhu, Y.L. Xu, Y. Zhen, Z.W. Chen, K.Y. Wong & S.L. Li*	Rapid emergency replacement of fire-damaged composite bridges using precast decks *C.S. Shim, C.H. Chung, I.K. Kim & Y.J. Kim*	Simplified and detailed calculations of long-term stress redistributions in continuous precast bridge decks *C. Sousa, M. Fonseca, R. Calçada & A.S. Neves*	Research on bond between non-metallic reinforcement bars and concrete for bridge applications *P. Mossakowski & W. Radomski*
Combination of sensing techniques to estimate tension and elongation in bridge cable-stays *D. Zonta, P. Esposito, M. Pozzi, R. Zandonini, M. Wang, Y. Zhao, D. Inaudi & D. Posenato*	Study of the hybrid structures changed from the steel bridges for railroad which considered construction *N. Taniguchi, M. Hansaka, N. Koide, K. Ohgaki, F. Ohkubo S. Satake & Y. Sugino*	Effect of soil-structure-interaction on the reliable seismic retrofit design of an existing highway bridge *S.R. Khavari, M. Hosseini, M. Taghipour, E. Davoodi, M. Zohrehvandi, A. Esmaeilifar & S. Tahmasebifard*	Durability of corrosion protecting materials under sleepers of railway steel bridges *H. Higashiyama, T. Nakayama, M. Kimura, T. Sakamoto & S. Matsui*
Fatigue safety assessment of existing railway steel bridges based on in-situ monitoring data *C. Wang, S. Yan & L. Hao*	Repair of fatigue cracks on steel plate deck in highway bridges with heavy traffic *K. Tokumasu, M. Kawamura & T. Nishioka*	Conflicting policies with CWR on open deck bridges *R.A.P. Sweeney*	MMA polymer concrete materials for aging bridge rehabilitation and sustainability *A.M. Dinitz & M.S. Stenko*
Wireless crack sensing using an RFID-based folded patch antenna *X. Yi, Y. Wang, R.T. Leon, J. Cooper, M.M. Tentzeris*	Development of the hot-spot stress sensor and application to orthotropic steel deck *T. Uesugi, S.Fujita, S. Tsukamoto, T. Yamagami & M. Sakano*	Bridge condition assessment based on long-term monitoring data and finite element model updating *H.C. Gomez & M.Q. Feng*	Life-cycle cost estimation of a new metal spraying system for steel bridges *T. Kondo & S. Okuno*
Piezoelectric-based crack detection techniques of concrete structures: experimental study *J.S. Zhu, C.E. Gao & L.K. He*	Princess Margaret Bridge rehabilitation *A.R. Zaki & A. FM Girgis*	Jacking of bridge girders for bearing replacement *A.P. Ranasinghe & W.L. Gottshall*	Basic creep study and formulation of a new model *M. Zeineddine, W. Raphael & A. Chateauneuf*

Concurrent Technical Sessions (TuE-1 to TuE-4)		16:30-18:00	Tuesday Evening, July 10th, 2012	
TuE-1 **Auditorium**	**TuE-2** **Magnolia Room**	**TuE-3** **Azalea Room**	**TuE-4** **Orchidea Room**
Mini-Symposium: **Research and Applications in Bridge Health Monitoring (3)**	Mini-Symposium: **Life-Cycle Design & Assessment of Bridges exposed to Corrosion and other Hazards (2)**	Special Session: **Light Rail Bridges in Chongqing, China**	Special Session: **Advances in Engineering Structure Management in Finland**
Chairs: TBA	*Chairs:* Alessandro Palermo & TBA	*Chairs:* Man-Chung Tang & TBA	*Chairs:* Marja-Kaarina Söderqvist & TBA
Theoretical testing of an empirical mode decomposition damage detection approach using a spatial vehicle-bridge interaction model *J. Meredith & A. González*	The damage characteristic and repair of the concrete-bridges under severe environment *S. Kiso, T. Tajiri, H. Miyauchi & A. Takeuchi*	Design of CaiJia rail bridge over JiaLing river in CongQing *B. Liu, Y. Qi & L. Lin*	Guidelines for calculating the life cycle costs *R. Kiviluoma & P. Korhonen*
Investigation of structural health of timber piles supporting aged bridge *T. Nishikawa, Y. Komatsu, S. Yumoto, T. Yamaguchi, T. Mino & T. Matsumoto*	Maintenance optimization of suspender ropes of suspension bridges *K. Sakai, S. Kusuhara, A. Moriyama & K. Ogihara*	Design of the Chongqing Caiyuanba Yangtze river bridge for dual highway and rail traffic *A.-S. Liu & Z.-G. Jiang*	Management of inspection data quality of the Transport Agency's structures *M.-K. Söderqvist*
Baseline-less structural health monitoring system based on recurrence quantification analysis *Y. Nomura, T. Kusaka, D. Morimoto & H. Furuta*	Multi-objective cost analysis for bridges considering disasters, bridge form and driving comfort *Y.Q. Wang, A.R. Chen, X. Ruan & Y. Li*	Wind-resistant study on Chongqing Chaotianmen Yangtze Bridge – The longest arch bridge in the world *C. Wang, Z. Li & P. Deng*	The new management system of engineering structures in Finland *M.-K. Söderqvist & M. Veijola*
One year monitoring of bridge eigenfrequency and vehicle weight for SHM *Y. Oshima, S. Heng & H. Kawano*	Life-cycle seismic evaluation of existing reinforced concrete bridges considering corrosion of steel reinforcement *Y.-C. Ou, A.B. Delima & L. Cute*	Development of rail transit in mountainous city of Chonqing, China *J.-H. Zhong*	Bridge life cycle optimisation, the Nordic ETSI project *M. Torkkeli & M. Piispanen*
Monitoring applications providing long-term benefits to owners *T. Spuler, G. Moor & R. Berger*	Effect of varying surface ageing on frost-salt scaling *H. Kuosa, M. Leivo, E. Holt & R.M. Ferreira*		Guidelines and policy for maintaining and managing all engineering structures of the Traffic Agency *M. Torkkeli & J. Lämsä*
First year data mining for vibration based condition monitoring of a cable stayed bridge *Z. Sun & T. Yan*	Modelling synergistic effects of carbonation/chloride penetration and frost attack for service life design of concrete bridges *E. Vesikari, H. Kuosa, J. Piironen & R.M. Ferreira*		Multi-objective optimization of engineering structures *P. Virtala, P.D. Thompson & R. Ellis*

TuE-5 Gardenia Room	TuE-6 Ortensia Room	TuE-7 Mimosa Room	TuE-8 Camelia Room
General Session: **Highway Bridges and Viaducts**	Special Session: **Advances in Nondestructive Evaluation and Monitoring of Concrete Bridge Decks**	General Session: **Wind Effects on Bridges**	Special Session: **New Developments on the Bridge Safety, Maintenance and Management in Mexico**
Chairs: TBA	*Chairs:* Nenad Gucunski & TBA	Chairs: TBA	Chairs: David De León & TBA
Earthquake retrofit campaign for large scale bridges in Istanbul *N.M. Apaydin*	Verification of advanced electromagnetic measurement techniques for corrosion and fracture detection of bridge tendons *A. Holst, H. Budelmann & H.-J. Wichmann*	Wind shielding on long span bridges *S. Kite, M. Carter & E. Ozkan*	Time variation of bridges structural reliability due to corrosion in Mexico *D. De León, C.A. González-Pérez, S. Díaz, D. Delgado & J.C. Arteaga*
Bridges and viaducts of "Variante di Valico" project *L. Ferretti Torricelli & A. Marchiondelli*	Damage assessment of reinforced concrete decks due to chloride-induced corrosion of reinforcing bars and fatigue *Y. Ishikawa, M. Aoyama, Y. Adachi & M. Nagai*	Static and dynamic windproof efficiency evaluation for bridge cross section considered transmission of fairing *H. Lee, S. Oh, N. Chun & H.-E. Lee*	Parametric study of bridges with substructure irregular conditions *M.C. Gómez-Soberón & D.J. Salas-Mengchún*
The renewal of the Burtscheidt Viaduct in Aachen Germany *A. Laubach*	Characterization and detection of bridge deck deterioration *K.R. Maser, A.J. Carmichael, N.M. Martino & R. Birken*	Blow-up oscillating solutions to some nonlinear fourth order differential equations describing oscillations of suspension bridges *F. Gazzola & R. Pavani*	Simplified revision of bridge structural types on seismic zones. Specific cases on Oaxaca, Guerrero, Michoacan, Colima and Mexico State *H. Hernández-Barrios & D. de León-Escobedo*
Highway A24 in Italy: improvement of seismic performance *F. Incelli, B. Rinaldi, E. De Angelis & S. Mancini*	Non-destructive highway inspection methods using high definition video and infrared technology *M. Matsumoto, M. Sugimoto, K. Hashimoto & K. Mitani*	Study on long-term wind data recorded at Sutong Bridge site *H. Wang, J. Niu, T. Guo & Z. Zong*	Dynamic characterization of highway bridges *M.E. Ruiz Sandoval, G. Martínez, R. Rojas, A.R. Sánchez, E. O Navarro, J.M. Jara, B.A. Olmos & J. de la C. Tejeda*
The maintenance of bridge structures: the case of the Soleri Viaduct in Cuneo *G. Pistone, A.D. Cavallo, R. Enrici & S. Nicola*	Rapid seismic scanning for bridge deck NDE *J.S. Popovics, T. Oh & R.W. Arndt*	The wind statistical characteristics analyse of long-span bridge based on long-term field measurement data *G.D. Zhou, Y.L. Ding, A.Q. Li & Y. Deng*	Monitoring integrity and corrosion damage on cable stayed bridge "Jaime Dovali" Mexico *R. Soto-Espitia, J.R. Vazquez Gonzalez & L. Martinez-Gomez*
Efficient solution for bridge reconstruction *V. Popa*	Assessing full-depth deck joint durability using embedded sensors and FE simulations *U.B. Attanayake, O. Abudayyeh, H.M. Aktan, I. Abdel-Qader, C. Mansiz & E. Almaita*		

08:00 - 09:30	**Keynote Lectures (Auditorium)**
	Bruno GODART: *Pathology, appraisal, repair and management of old prestressed beam and slab bridges*
	Richard SAUSE: *Innovative steel bridge girders with tubular flanges*
	James BROWNJOHN: *Operational deformations in long span bridges*
09:30 - 11:00	**T.Y. Lin's Hundredth Birthday Special Plenary Session (Auditorium)**
	Chuck SEIM: *The legacy of T.Y. Lin, his vision of bridge engineering*
	Jiri STRASKI: *Power of prestressing*
	Marwan NADER: *Design of the San Francisco Oakland Bay Bridge*
	Man-Chung TANG: *Conceptualization of a bridge across the Taiwan Strait*
11:00 - 11:30	**Coffee Break (Regina Palace Garden)**
11:30 - 13:00	**Concurrent Technical Sessions**
	WeM-1 (Auditorium) *Research and Applications in Bridge Health Monitoring (4)*
	WeM-2 (Magnolia) *Integral Bridges: Design and Technological Issues*
	WeM-3 (Azalea) *Extreme Events of Long Span Bridges: Design, Assessment and Management*
	WeM-4 (Orchidea) *Lessons Learnt from the Canterbury Earthquakes: Assessment, Testing and Analysis of New Zealand Bridges*
	WeM-5 (Gardenia) *Energy Harvesting in Bridges and Transportation Infrastructure Networks*
	WeM-6 (Ortensia) *Many Bridges Aren't Straight - Investigations of Curved and Skewed Structures*
	WeM-7 (Mimosa) *Corrosion Detection in Cables and Concrete Bridges by Magnetic Methods*
	WeM-8 (Camelia) *Bridge Management and Life-Cycle Cost*
13:00 - 14:00	**Lunch (Regina Palace Liberty Hall)**
14:00 - 16:00	**Concurrent Technical Sessions**
	WeA-1 (Auditorium) *Risk Based Bridge Management (1)*
	WeA-2 (Magnolia) *Residual Capacity and Service Life Assessment of Bridges*
	WeA-3 (Azalea) *Damage Identification and Bridge Assessment*
	WeA-4 (Orchidea) *Vulnerability of Bridges to Fire and Explosion*
	WeA-5 (Gardenia) *Monitoring and Inspection of Bridges*
	WeA-6 (Ortensia) *Bridge Joints and Seismic Protection Devices*
	WeA-7 (Mimosa) *Optical Monitoring Techniques for Bridge Maintenance and Safety*
	WeA-8 (Camelia) *Extending Bridge Life Through Industry Academic Partnerships*
16:00 - 16:30	**Coffee Break (Regina Palace Garden)**
16:30 - 18:00	**Concurrent Technical Sessions**
	WeE-1 (Auditorium) *Risk Based Bridge Management (2)*
	WeE-2 (Magnolia) *Artificial Intelligence Methods in Bridge Analysis and Design*
	WeE-3 (Azalea) *Design and Seismic Analysis of Long Span Bridges – Case Studies*
	WeE-4 (Orchidea) *Gusset Plates in Steel Truss Bridges: Testing, Analysis and Monitoring*
	WeE-5 (Gardenia) *Understanding and Enhancing Bridge Performance*
	WeE-6 (Ortensia) *Bridge Modeling and Simulation*
	WeE-7 (Mimosa) *Analysis, Design and Testing of Road Timber Bridges*
	WeE-8 (Camelia) *Composite Bridge Structures*
18:00 - 18:30	**Closing Ceremony**

08:00 - 09:30

Keynote Lectures (Auditorium)
Chairs: TBA

Pathology, appraisal, repair and management of old prestressed beam and slab bridges

Bruno GODART
Université Paris-Est, IFSTTAR
Paris, France

Innovative steel bridge girders with tubular flanges

Richard SAUSE
ATLSS Center, Lehigh University
Bethlehem, PA, USA

Operational deformations in long span bridges

James BROWNJOHN
University of Sheffield
Sheffield, UK

09:30 - 11:00

T.Y. Lin's Hundredth Birthday Special Plenary Session (Auditorium)
Chair: Dan M. Frangopol and Frieder Seible

The legacy of T.Y. Lin, his vision of bridge engineering
Chuck SEIM, Consulting Bridge Engineer, El Cerrito, CA, USA

Power of prestressing
Jiri STRASKI, Brno University of Technology, Brno, Czech Republic

Design of the San Francisco Oakland Bay Bridge
Marwan NADER, T.Y. Lin International, San Francisco, CA, USA

Conceptualization of a bridge across the Taiwan Strait
Man-Chung TANG, T.Y. Lin International, San Francisco, CA, USA

WeM-1 Auditorium	WeM-2 Magnolia Room	WeM-3 Azalea Room	WeM-4 Orchidea Room
Mini-Symposium: **Research and Applications in Bridge Health Monitoring (4)**	Special Session: **Integral Bridges: Design and Technological Issues**	Special Session: **Extreme Events of Long Span Bridges: Design, Assessment and Management**	Special Session: **Lessons Learnt from the Canterbury Earthquakes: Assessment, Testing and Analysis of New Zealand Bridges**
Chairs: TBA	*Chairs:* Pier Giorgio Malerba & Vladimir Kristek	*Chairs:* Airong Chen & TBA	*Chairs:* Alessandro Palermo & Liam Wotherspoon
Update on AAR bridge testing and monitoring *R.A.P. Sweeney & D. Otter*	Two integral bridges connecting the runways of the Milano Malpensa Airport *P.G. Malerba & G. Comaita*	Analysis on applicability of health monitoring techniques on a curved cable stayed bridge *B. Briseghella, A. Chen, X. Li, T. Zordan, C. Lan & E. Mazzarolo*	Observed and predicted bridge damage following the recent Canterbury earthquakes: toward the calibration and refinement of damage and loss estimation tools *M. Brando, S.L. Lin, S. Giovinazzi & A. Palermo*
Ankara-Istanbul railway high speed train project, construction of viaduct V4 of 2400 meters *S. Uluöz, S. Düzbasan, M. Camcioglu & E. Yakit*	Structure-soil interaction of buried arch bridges *M. Foglar & V. Kristek*	Computational approach to predict transporting possibility of concrete in long-distance pumping *S.D. Jo, S.G. Lee, K.P. Jang, S.H. Kwon, C.K. Park, J.H. Jeong & S.H. Lee*	Lateral spreading interaction with bridges during the Canterbury earthquakes *E. Camnasio, M. Le Heux, A. Palermo & L.M. Wotherspoon*
Application of OBR fiber optic technology in the structural health monitoring of the Can Fatjó Viaduct (Cerdanyola del Vallés - Spain) *V. Villalba, S. Villalba & J.R. Casas*	Integral bridge design solutions for Italian highway overpasses *L. Ferretti Torricelli, A. Marchiondelli, R. Pefano & R. Stucchi*	Time-dependent reliability of carbonation process for concrete component with surface coating protection *X. Liu, X. Ruan & A.R. Chen*	Forced vibration testing of bridge damaged in the 2010 Darfield earthquake *L.S. Hogan, L.M. Wotherspoon, S. Beskhyroun & J.M. Ingham*
A comparison of different dynamic characterization methods for a truss bridge *T.R. Wank, E.V. Fernstrom & K.A. Grimmelsman*	Integral bridge: a review on its behaviour under earthquake loads *M. Masrilayanti & L. Weekes*	Risk based management in Minpu Bridge *X. Ruan, Z.Y. Yin & Z.G. Yan*	Overview of bridge performance during the 2011 Christchurch earthquake *A. Palermo, A. Kivell, L.M. Wotherspoon, L.S. Hogan, M. Yashinsky, M. Bruneau & E. Camnasio*
Health monitoring system of bridges network in Romania *C.C. Comisu, G. Boaca & A. Ianos*	The design and construction of bridge structure erected by balanced cantilevers method situated on the Prague bypass *M. Šístek, V. Engler, F. Hanus, R. Lenner & L. Vráblík*	The effect of lane changing on long-span highway bridge traffic loading *B. Enright, C. Carey, C.C. Caprani & E.J. OBrien*	Performance of bridges during the 2010 Darfield earthquake *L.M. Wotherspoon, L.S. Hogan, A. Palermo, M. Le Heux, M. Bruneau & M. Anagnostopoulou*
Monitoring and conservation system design of historic bridge based on the internet of things *Y.Q. Xiang, Q.P. Li, K. Cheng & Q.Q. Wu*	Seismic assessment of monolithic vs. pin column top connections in R/C skewed bridges *N. Attarchian, A. Kalantari & A.S. Moghadam*	Structural reliability of cable stayed bridges based on analysis of deformations *V. Straupe & A. Paeglitis*	An asset management approach to bridge barrier retrofits *P.S. McCarten & N. Lloyd*

WeM-5 Gardenia Room	WeM-6 Ortensia Room	WeM-7 Mimosa Room	WeM-8 Camelia Room
Special Session: **Energy Harvesting in Bridges and Transportation Infrastructure Networks**	Special Session: **Many Bridges Aren't Straight - Investigations of Curved and Skewed Structures**	Special Session: **Corrosion Detection in Cables and Concrete Bridges by Magnetic Methods**	General Session: **Bridge Management and Life-Cycle Cost**
Chairs: Konstantinos Gkoumas & TBA	*Chairs:* Daniel Linzell & TBA	*Chairs:* Al Ghorbanpoor & Bernd Hillemeier	*Chairs:* TBA & TBA
Energy harvesting in bridges and transportation infrastructure networks: state of art, recent trends and future developments *K. Gkoumas*	An evaluation of lateral flange bending in straight and skewed short-span steel bridges *K.E. Barth, G.K. Michaelson & N.Y. Galindez*	Magnetic inspection of adjacent box-beam girders *B. Fernandes, D.K. Nims & V. Devabhaktuni*	Integrated bridge management from 3D-model to network level *K. Lukas & A. Borrmann*
Vibration energy harvesting devices based on magnetostrictive materials *D. Davino, C. Visone & A. Giustiniani*	Behavior of skewed concrete box girder bridge under static and dynamic loading *X.-H. He, X.-W. Sheng, A. Scanlon & D.G. Linzell*	Fast and innovative detection of fractures in prestressing tendons on German highway-bridges *C. Flohrer*	Network bridge management with life-cycle cost optimization *J.O. Almeida, R.M. Delgado & P.F. Teixeira*
Nonlinear vibration harvesting for extended structures monitoring *L. Gammaitoni, H. Vocca, I. Neri, F. Orfei & F. Travasso*	Skewed steel bridge cross-frame live load performance *S.D. Murphy & D.G. Linzell*	Corrosion detection in tendons of segmental concrete bridges *A. Ghorbanpoor & E. Abdel-Salam*	The whole life costing of bridge deck replacement – A case study *T.W. Siwowski*
A self-powered vibration monitoring and control system for stay cables: numerical study *S. Zhu, W.A. Shen & J. Li*	Special considerations in curved segmental post-tensioned bridges *A.J. Schokker*	Magnetic localization of fractures of broken wires in pre-stressing cables of bridges and parking decks *B. Hillemeier & C.-I Pak*	Exploiting linear system behaviour to determine structure level costs based on element condition states *D. Fernando, B.T. Adey & S. Walbridge*
Design of energy harvesting bridge considering practical traffic conditions *M.S. Choi, S.H. Kim & H.E. Youn*	Effect of skewness on shear force applied to shear keys in skewed highway bridges *A. Kalantari & S.M.J. Foroughi*	Application of line scanner in remanent and active field compared with the big magnet impulse magnetization *S. Knapp & B. Hillemeier*	Modelling inspection and fatigue retrofitting by post-weld treatment in bridge management systems *S. Walbridge, D. Fernando & B.T. Adey*
	Seismic upgrade of steel curved highway viaducts with isolation bearings and cable restrainers *C. Mendez Galindo, G. Moor, R. Berger & T. Hayashikawa*		Zambia bridge and culvert inspection and management system *M.C. Schellhase, J.K. Shaffer & B.D. Witter*

Concurrent Technical Sessions (WeA-1 to WeA-4)		14:00-16:00 | Wednesday Afternoon, July 11th, 2012	
WeA-1 Auditorium	**WeA-2** Magnolia Room	**WeA-3** Azalea Room	**WeA-4** Orchidea Room
Mini-Symposium: **Risk Based Bridge Management (1)**	General Session: **Residual Capacity and Service Life Assessment of Bridges**	General Session: **Damage Identification and Bridge Assessment**	Special Session: **Vulnerability of Bridges to Fire and Explosion**
Chairs: Leo Klatter & Jung Sik Kong	Chairs: TBA	Chairs: TBA	Chairs: Luisa Giuliani & TBA
Bridge risk management: back to basics *P.S. McCarten*	Enhanced analytical method of predicting residual strength capacities of corroded steel bridge plates *J.M.R.S. Appuhamy, M. Ohga, P. Chun, S. Furukawa & P.B.R. Dissanayake*	Application of the operational modal analysis and modal updating methods for the characterization of the longitudinal modulus of an ancient reinforced concrete truss bridge in Almeria (Spain) *J.F.J. Alonso & A.S. Pérez*	Consequence-based robustness assessment of bridge structures *F. Brando, L. Cao, P. Olmati & K. Gkoumas*
Risk Based Inspection (RBI) at Rijkswaterstaat *J. Bakker & L. Klatter*	Life time extension of prestressed beams using cathodic protection *R. Brueckner, C.P. Atkins & P. Lambert*	Structural assessment of bridges and health monitoring programs based on dynamical tests *F. Benedettini, A. Morassi & F. Vestroni*	Evaluation of structural risk for bridges under fire *F. Gentili & F. Petrini*
Risk based bridge planning in Minnesota *P.D. Thompson, H. Rogers & D. Thomas*	Service life assessment of steel riveted railway bridges: a case study *L. Cascini, M. D'Aniello, F. Portioli & R. Landolfo*	Damage detection in a suspension bridge model using the interpolation damage detection method *M. Domaneschi, M.P. Limongelli & L. Martinelli*	Vulnerability of bridges to fire *L. Giuliani, C. Crosti & F. Gentili*
Inspection method related to structural safety of RC structures *A. de Boer & N. Booij*	Residual capacity from aggregate interlock of cracked concrete slab bridge *E.O.L. Lantsoght, C. van der Veen & J.C. Walraven*	Low cost dynamic structural identification system for extensive bridge monitoring *J. García-Palacios, A. Araujo, O. Nieto-Taladriz, A. Samartín, E. Reynders & G. de Roeck*	Evacuation of mixed populations from trains on bridges *C. Kindler, J.G. Sørensen & A.S. Dederichs*
SmartBMS – Improving bridge inspection accuracy and efficiency using a bridge management system in a SmartPhone *R.M. Ellis, C. McElhinney & K. Hong*	Shear performance of long-term corroded reinforced concrete beams *I. Khan, R. François & A. Castel*	Damage detection in suspension bridges from wind response measurements and automatic mode selection: a feasibility study *F. Ubertini & A.L. Materazzi*	Adapting OpenSees to simulate bridge structures in fire *A. Usmani, Y. Jiang, J. Jiang, L. Jiang & S. Welch*
Consistency of bridge deterioration rates across agencies *P.D. Thompson*	Strength of corroded steel structure bonded with steel cover plate *M. Fukuda, K. Fujii, T. Nakayama & H. Horii*	Dynamic characterization of multiple identical spans of a steel girder bridge *R. Maestri, E.V. Fernstrom & K.A. Grimmelsman*	Experimental testing of blast resistance FRC and RC bridges *M. Foglar, M. Kovar & A. Kohoutkova*
Incorporating risk and criticality in bridge management decision making and project prioritization *R.M. Ellis & K. Hong*	Shear strength for corroded plate girder bridge *T. Shimozato, Y. Tamaki, Y. Arizumi, T. Yabuki & S. Ono*	Experimental modal analysis and fatigue assessment on the Lagoscuro viaduct *L. Vincenzi, M. Savoia & W. Salvatore*	Repair and dynamic-based condition assessment of impact damage to a freeway overpass bridge near Mossel Bay, South Africa *A.A. Newmark, P. Moyo & E.J. Kruger*
The use of MINLP to determine optimal preservation strategies for road links composed of pavement sections and bridges *N. Lethanh & B.T. Adey*	An approach to evaluating the influences of aging on the system capacity of steel I-girder bridges *J. McConnell, G. McCarthy, & D. Wurst*	Mode shape estimation of a bridge using the responses of passing vehicles *Y. Oshima, K. Yamamoto & K. Sugiura*	The real-time alarming technique of ship-collision to long-span bridges based on the displacement data of expansion joints *Y.F. Zhang, S.C. Zhu, & L.T. Zhang*

Concurrent Technical Sessions (WeA-5 to WeA-8)		14:00-16:00	Wednesday Afternoon, July 11th, 2012	
WeA-5 Gardenia Room	**WeA-6** Ortensia Room	**WeA-7** Mimosa Room	**WeA-8** Camelia Room
General Session: **Monitoring and Inspection of Bridges**	General Session: **Bridge Joints and Seismic Protection Devices**	Special Session: **Optical Monitoring Techniques for Bridge Maintenance and Safety**	Special Session: **Extending Bridge Life Through Industry Academic Partnerships**
Chairs: TBA	*Chairs:* TBA	*Chairs:* Paul Sumitro & Hiroshi Matsuda	*Chairs:* Eugene J. OBrien & TBA
Thermography for the inspection of infrastructures *R.W. Arndt & H. Parvardeh*	Assessment of bridge expansion joints using long-term displacement measurement under changing environment *Y. Deng, Y.L. Ding, A.Q. Li & G.D. Zhou*	Field loading measurement of post-tension PC girder bridge with line sensor scanner *A. Demizu, H. Matsuda, Y. Ito, K. Hida, T. Okamoto, M. Uchino & P. Sumitro*	Attenuating resonant behavior of a tied arch railway bridge using increased hanger damping *A. Andersson & R. Karoumi*
Monitoring during large construction projects *H. De Backer, A. Outtier, K. Schotte, D. Stael, W. Nagy & Ph. Van Bogaert*	Dynamic response of isolated viaduct considering knocking-off effects of displacement restrainers *M. Matsumura & M. Yoshida*	Application of full-field non-contact measurement technology to clarification of deterioration mechanism on constructional material *H. Goda, M. Hibino, Y. Kawabata, M. Uchino & H. Matsuda*	Probabilistic approach to fatigue *J. Baussaron & T. Yalamas*
Remote monitoring of suspension bridge cables as calibrated in the laboratory and tested in the field *D. Khazem, K. Serzan & R. Betti*	Design and testing of seismic protection devices for bridges according to EN 15129 *C. Mendez Galindo, T. Spuler, G. Moor & R. Berger*	Existing bridge structural identification by vibration measurements using laser doppler velocimeter *K. Makino, C. Morita, H. Matsuda, P,S. Sumitro & S. Yanai*	Improved bridge response evaluation based on dynamic testing *I. González, R. Karoumi & A. LLorens*
Assessing impact-echo test variables for detecting loss of bond in RC bridge columns *A. Pagnotta, P. Gardoni, D. Trejo & Q. Huang*	High damping curved surface sliding isolators for bridges *V. Quaglini*	Development of a hybrid camera system for bridge inspection *S. Nishimura, K. Kimoto, S. Kusuhara, S. Kawabata, A. Abe & T. Okazawa*	Traffic load models for long span bridges *A.A. Harapetova, A.J. O'Connor & E.J. OBrien*
Low-power wireless monitoring of fracture-critical bridges *D.L. Potter, J.D. Fasl, T.A. Helwig, S.L. Wood, V.A. Samaras, A.A. Yousef, K.H. Frank & R.E. Lindenberg*	The improvement of the seismic response of a concrete bridge by using isolation devices *I.R. Racanel, D.I. Cretu & M. Contiu*	Monitoring of short & long term cable force on a cable stayed bridge using package type FBG sensors *D.Y. Park, D.G. Kim, S.H. Kim & S.W. Lee*	Procedures for calibrating Eurocode traffic load Model 1 for national conditions *E.J. OBrien & A.J. O'Connor, J.E. Arrigan*
Bridge monitoring by fiber optic deformation sensors: a case study *G. Uva, D. Raffaele, F. Porco, A. Fiore & G. Porco*	Renewal of small movement expansion joints with minimum break-out and time requirements *T. Spuler & G. Moor*	Strain visualization sticker using Moiré fringe for remote sensing *T. Takaki, K. Fujii, I. Ishii, S. Umemoto, H. Ohata, N. Miyamoto & T. Okamto*	Introduction to the Long Life Bridges project *E.J. OBrien, A.J. O'Connor & J.E. Arrigan (A. Andersson)*
Wireless interrogation of passive crack sensor *Z. Xu, Y. Jia, R. Valentín & G. Portela*	Renewal of bridge expansion joints with minimal disruption to traffic – A solution using modularised sliding finger joints *T. Spuler & G. Moor*	Strain measurement of bridge members using strain visualization sticker *S. Umemoto, H. Ohata, N. Miyamoto, T. Okamoto, T. Takaki, K. Fujii & I. Ishii*	Reliability-based assessment of fatigue life for bridges *H.S. Toft & J.D. Sørensen*
Assisting routine inspection of highway bridges with IFC-based 3D models *S.-H. Lee, M.G. Huang & B.-G. Kim*	A study on the durability performances for bridge expansion joints *D. Wakabayashi, T. Asai & S. Ono*	Monitoring of a prestressed high performance concrete bridge from construction through service using an embedded optical fiber sensor system *R.L. Idriss*	A comprehensive guide for designing bridges for service life *A. Azizinamini, E. Power & G. Myers*

WeE-1 Auditorium	WeE-2 Magnolia Room	WeE-3 Azalea Room	WeE-4 Orchidea Room
Mini-Symposium: **Risk Based Bridge Management (2)**	Special Session: **Artificial Intelligence Methods in Bridge Analysis and Design**	Special Session: **Design and Seismic Analysis of Long Span Bridges – Case Studies**	Special Session: **Gusset Plates in Steel Truss Bridges: Testing, Analysis and Monitoring**
Chairs: Paul Thompson & Bryan Adey	*Chairs:* Elsa Garavaglia & Luca Sgambi	*Chairs:* Ayaz H. Malik & TBA	*Chairs:* Chiara Crosti & TBA
Overview of existing Bridge Management Systems - Report by the IABMAS Bridge Management Committee *B.T. Adey*	Prestress optimization of hybrid tensile structures *A. Albertin, P.G. Malerba, N. Pollini & M. Quagliaroli*	Seismic assessment of long curved bridges using modal pushover analysis: a case study *M.S. Ahmed & C.C. Fu*	Structural health monitoring of a steel railway bridge on the river Suaçuí *W.S. Assis, L.M. Trautwein, T.N. Bittencourt & A.P.C. Neto*
Application of bridge management system to determine preservation and improvement budgets, meet condition targets, and manage risk for the City of Hamilton *A. Dalziel, R. Ellis, G. Moore & R. Andoga*	An expert system for bridge inspection *S. Becker & N. Gebbeken*	Innovative methodology towards the design of long span bridges *A.H. Malik*	Simplified gusset plate model for failure prediction of truss bridges *C. Crosti & D. Duthinh*
Updating bridge management system in Korea considering recent subjects in bridge management *J.H. Kim, H.-M. Park, J.S. Kong & K.-H. Park*	Selective maintenance strategies applied to a bridge deteriorating steel truss *E. Garavaglia, L. Sgambi & N. Basso*	Seismic design of the San Francisco – Oakland Bay Bridge self anchored suspension bridge *M. Nader & M.C. Tang & B. Maroney*	Full scale fatigue testing of original truss members and connections *R. Helmerich*
Development, implementation and application of bridge management in Prince Edward Island *D.J. Evans & R.M. Ellis*	Time dependent behaviour of an elementary bridge model in presence of uncertainties *P.G. Malerba, M. Quagliaroli, L. Sgambi & P. Baraldi*	Structural design and analysis of long span bridges *S. Wang & C.C. Fu*	Inspection strategies to prevent fatigue failure of gusset plates in steel truss bridges *J. Herter*
First results of the German BMS – Influence of data availability and quality *R. Holst (T. Neumann)*	Intelligent bridges – Adaptive systems for information and holistic evaluation in real time *T. Neumann & P. Haardt*	Rehabilitation of the suspension bridge over Zambezi River in Mozambique *A. Reis & C. Baptista*	Quantitative evaluation of digital image correlation as applied to large-scale gusset plate experiments *M.A. Iadicola, R.S. Zobel & J.M. Ocel (C. Crosti)*
Railway bridge risk assessment in Finland *J. Wuorenjuuri*	High performance computing for damage detection of civil infrastructural systems *Z.Y. Wu, T. Mi, J. Zhao & G. Xu*	Static and dynamic load tests of a long-span cable-stayed bridge over Odra River in Wroclaw *M. Kuzawa, J. Bien, P. Rawa, T. Kaminski & J. Zwolski*	An in-depth analysis of I35W Bridge collapse *S. Hao*

WeE-5 Gardenia Room	WeE-6 Ortensia Room	WeE-7 Mimosa Room	WeE-8 Camelia Room
Special Session: **Understanding and Enhancing Bridge Performance**	General Session: **Bridge Modeling and Simulation**	Special Session: **Analysis, Design and Testing of Road Timber Bridges**	General Session: **Composite Bridge Structures**
Chairs: John M. Hooks **&** TBA	*Chairs:* TBA	*Chairs:* Alessandro Palermo & Keith Crews	*Chairs:* TBA
Studying, understanding & enhancing the performance of bridges in the United States *J.M. Hooks, A. Foden & M.C. Brown*	The benefits and use of FE modelling in bridge assessment and design *P. Icke & C. Margheriti*	Non-linear analysis of a stress-laminated-timber bridge loaded to failure *K. Ekholm, I.R. Kliger & R. Crocetti*	Towards a load rating methodology for concrete-encased pre-stressed steel girder bridges based on US standards *U. Barajas-Valdes, G. Portela-Gauthier, R.N. González, G. Velázquez & W. Varela-Ortiz*
Monitoring bridges with wireless sensor networks: a critical assessment *G. Feltrin*	A Timoshenko–based structural model for the analysis of bridges *M. Ferraz, R. Faria & J. Figueiras*	Timber bridges in Sweden – On-going research and steadily expanding market *I.R. Kliger, K. Ekholm & R. Crocetti*	Impact effect statistic investigation of concrete filled steel tube arch bridge under moving vehicles based on the field test and simulation analysis *Y. Li, Y. Liu & H. Sun*
Evaluating and forecasting bridge performance under uncertainty *D.M. Frangopol & D. Saydam*	Finite element modelling of Humber Bridge *A.R. Rahbari & B.J.M.W. Brownjohn*	Capacity of compression members in heritage timber truss bridge *A. Nicholas, W. Ariyaratne & K. Crews*	Analytical and experimental study for flexure of composite bridges with CFT girder *H.J. Ko, H.E. Lee & J. Moon*
Updating existing railway bridges based on monitoring data *E. Brühwiler, M. Rocha, M.A. Treacy, T.N. Bittencourt & A.P.C. Neto*	3D numerical simulation of soil-structure interaction effect: the Acquasanta, Genoa, Railway Bridge *R. Guidotti, I. Mazzieri & M. Stupazzini*	Simplified fatigue verification for timber-concrete composite bridges considering notched connections *K. Stephan, U. Kuhlmann & P. Aldi*	Push-out tests of straight shear connectors based on steel-concrete adherence *H.J.F. Diógenes, A.L.H.C. El Debs & M.K. El Debs*
A model-free data-interpretation approach for long-term monitoring of bridges *I. Laory, T.N. Trinh & I.F.C. Smith*	Computer simulation of concrete bridges *R. Pukl, V. Cervenka, J. Cervenka & D. Novák*		Composite concrete encased steel beam-column design in AASHTO specifications *L.L.-Y. Lai*
Extracting knowledge from structural response data *F.L. Moon, J.S. Weidner & N.C. Dubbs*	Numerical simulations of prestress loss due to creep and shrinkage in singular regions of concrete *L. Vrablik, J. Losko & V. Kristek*		