

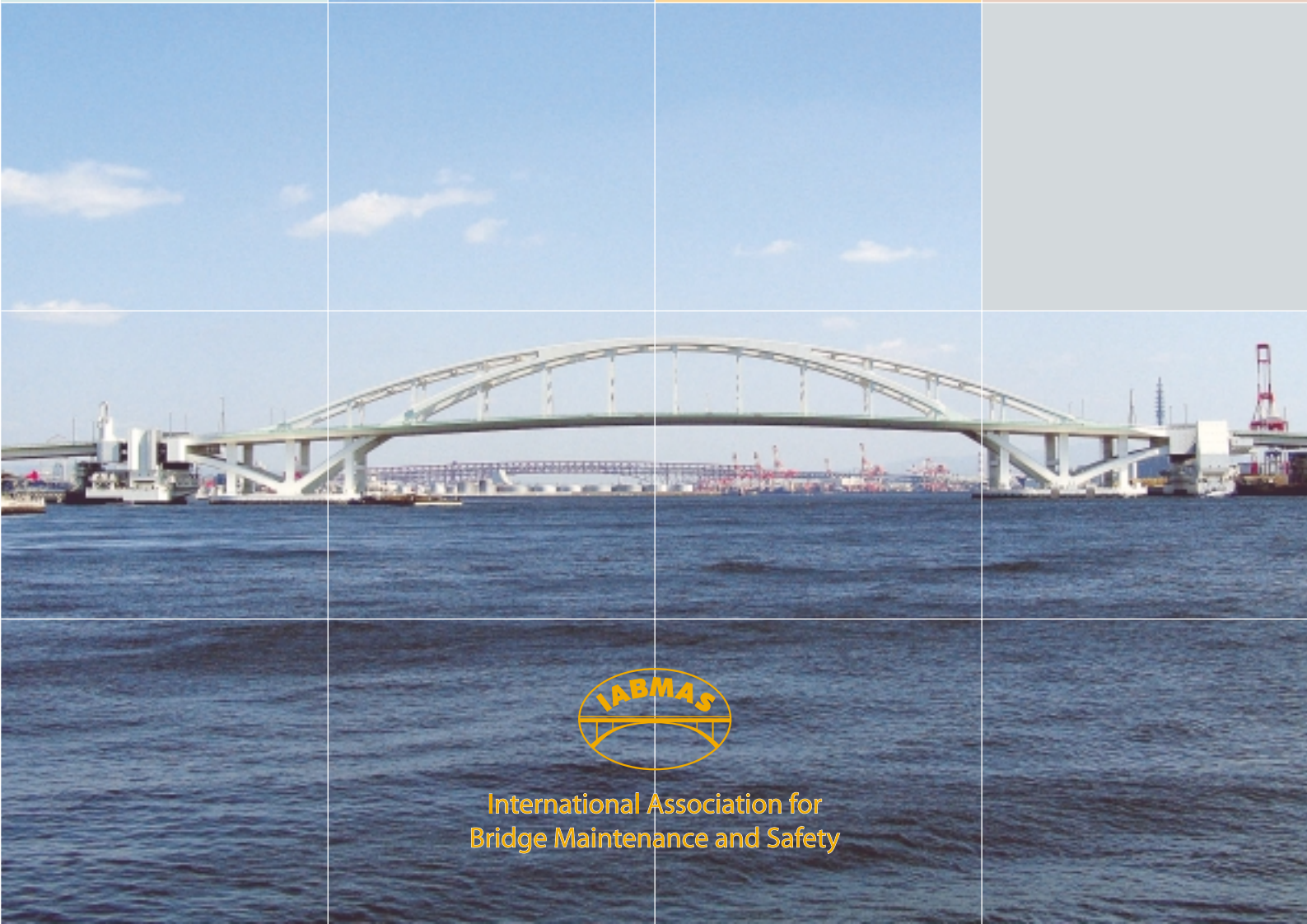
IABMAS'04

FINAL PROGRAM

Second International Conference on
Bridge Maintenance, Safety
and Management
Kyoto, October 18-22, 2004



<http://www.IABMAS.org/>



International Association for
Bridge Maintenance and Safety

The number of deteriorating bridges is increasing dramatically worldwide. Costs for maintenance, repair and rehabilitation of these bridges far exceed available budgets. Maintaining the safety of existing bridges by making better use of available resources is a major concern for bridge management. Internationally, the bridge engineering profession has taken positive steps in recent years to develop more comprehensive bridge performance measures, conduct better maintenance activities, and provide new forms of bridge management. It was therefore considered appropriate to bring together all of the very best work that has been done in the field of bridge maintenance, safety, management and cost at the Second International Conference on Bridge Maintenance, Safety and Management (IABMAS'04), held in Kyoto, Japan, October 18-22, 2004. The First International Conference on Bridge Maintenance, Safety and Management (IABMAS'02) was held in Barcelona, Spain, July 14-17, 2002.

The International Association for Bridge Maintenance and Safety (IABMAS), which serves as the organizing association of IABMAS'04, encompasses all aspects of bridge maintenance, safety, management and cost. Specifically, it deals with: health monitoring and inspection of bridges; bridge repair and rehabilitation issues; bridge management systems; needs of bridge owners, financial planning, whole life costing and investment for the future; bridge related safety and risk issues and economic and other implications. The objective of IABMAS is to promote international cooperation in the fields of bridge maintenance, safety, management and cost for the purpose of enhancing the welfare of society. The interest of the international bridge community in all these fields has been confirmed by the high response to the call for papers. In fact, more than 480 abstracts were received at the Conference Secretariat. About 72 percent of them were selected for final publication as full papers and presentation at the Conference within three plenary sessions and 63 technical sessions. Compared to IABMAS'02 the total number of papers scheduled for presentation has increased by 117 to 347.

IABMAS'04 covered all major aspects of bridge maintenance, safety, management and cost including assessment and evaluation, bridge codes, bridge diagnostics, bridge management systems, durability, deterioration modeling, emerging technologies, field testing, financial planning, health monitoring, high performance materials, inspection, loads, maintenance strategies, new technical and material concepts, nondestructive testing, rehabilitation, reliability and risk management, repair, replacement, safety and serviceability, service life prediction, strengthening, and whole life costing, among others.

The abstracts and the full contributions, including 9 keynote lectures and 338 technical papers from 33 countries, are assembled in the book of abstracts and in the CD-ROM Proceedings, respectively. The book and the CD-ROM represent a permanent record of the proceedings of IABMAS'04. This record should serve as a valuable reference on the recent developments in bridge maintenance, safety, management and cost.

On behalf of IABMAS, the chairs of the Conference would like to take this opportunity to express their sincere thanks to the authors and participants for their contributions, to the members of the Conference Scientific Committee for their dedicated work, and to the members of the Local Organizing Committee for the time and effort they have devoted to making IABMAS'04 a successful event. Finally, we would like to register our sincere thanks to all the sponsors of IABMAS'04.

Eiichi Watanabe and Dan M. Frangopol
Chairs, IABMAS'04

- **ASCE-SEI**, American Society of Civil Engineers - Structural Engineering Institute, USA
- **CALTRANS**, California Department of Transportation, USA
- **COSEIK**, Computational Structural Engineering Institute of Korea, Korea
- **CU**, University of Colorado at Boulder, USA
- **Danish Road Directorate**, Ministry of Transport, Denmark
- **EXPO'70**, Commemorative Organization for the Japan World Exposition '70, Japan
- **FHWA**, Federal Highway Administration, USA
- **IABSE**, International Association for Bridge and Structural Engineering, Switzerland
- **JASBC**, Japan Association of Steel Bridge Construction, Japan
- **JBEC**, Japan Bridge Engineering Center, Japan
- **JPCCA**, Japan Prestressed Concrete Contractors Association, Japan
- **JSCE**, Japan Society of Civil Engineers, Japan
- **JSMS**, The Society of Materials Science, Japan
- **JSPS**, Japan Society for the Promotion of Science, Japan
- **JSSC**, Japanese Society of Steel Construction, Japan
- **The Kajima Foundation**, Japan
- **KCI**, Korea Concrete Institute, Korea
- **KSCE**, Korean Society of Civil Engineers, Korea
- **KSSC**, Korean Society of Steel Construction, Korea
- **KU-CER**, Dept. of Civil and Earth Resources Engineering, Kyoto University, Japan
- **The Maeda Engineering Foundation**, Japan
- **NSF**, National Science Foundation, USA
- **Rent All Foundation**, Japan
- **TRB**, Transportation Research Board, USA
- **UPC**, School of Civil Engineering, Barcelona, Spain



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International Association for Bridge Maintenance and Safety
(IABMAS, <http://www.IABMAS.org>)

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General Information

The IABMAS'04 Conference will be held at the Kyoto International Conference Hall (KICH). KICH is an international convention center with all modern facilities. It is located in the scenic north area of Kyoto city, verdurous and having quiet surroundings. The ancient capital of Japan, Kyoto, is nestled amongst picturesque mountains and calm waters. Since its establishment as the seat of the Imperial Court late in the 8th century, the city has prospered as a center for politics, economy, culture, and the arts. With its innumerable cultural treasures and traditional crafts, Kyoto has always attracted both domestic and foreign visitors. For details, visit the homepage of KICH at: <http://www.kich.or.jp>

Proceedings: the book of abstracts and a CD-ROM proceedings will be distributed with registration materials at the Conference.

Schedule: an overview of the schedule is provided on the back cover of this program.

Onsite Registration: onsite registration fees are

JPY 65,000 (IABMAS member),

JPY 75,000 (IABMAS non-member),

JPY 30,000 (Students),

JPY 16,000 (Accompanying Persons)

The registration fee includes: conference attendance, the Book of Abstracts and the CD-ROM Proceedings, coffee breaks, banquet (except for students fee) and welcome reception. No refund is foreseen for the registration fees.

Opening Ceremony

Time: Tuesday, October 19, 8:20-9:00

Place: Room A

"Koto" (Japanese Harp) performance will be held at the beginning of the Opening Ceremony.

(Players: M. Kikueda, T. Kikuewa, M. Kikueno and M. Kikuesu)

Closing Ceremony

Time: Thursday, October 21, 18:20-18:50

Place: Room A

Keynote Lectures

- **Joern Lauridsen**, *Danish Road Directorate, Copenhagen, Denmark*

"Bridge owner's benefits from probabilistic approaches - experiences and future challenges" (Tuesday, October 19, 9:00-9:30, Room A)

- **Chitoshi Miki**, *Tokyo Institute of Technology, Tokyo, Japan*

"Bridge engineering learned from failures - fatigue and fracture control" (Tuesday, October 19, 9:30-10:00, Room A)

- **Chung-Bang Yun**, *Korea Advanced Inst. of Science and Technology, Taejon, Korea*

"Recent R&D activities on structural health monitoring for bridge structures in Korea" (Tuesday, October 19, 10:00-10:30, Room A)

- **Alfredo H-S. Ang**, *University of California, Irvine, CA, USA*

"Modeling and analysis of uncertainties for risk-informed decisions in engineering - with application to bridges" (Wednesday, October 20, 8:30-9:00, Room A)

- **Paul Thompson**, *Castle Rock, CO, USA*

"Bridge management systems: where should we go from here?" (Wednesday, October 20, 9:00-9:30, Room A)

- **Hyun-Moo Koh**, *Seoul National University, Seoul, Korea*

"Preparing for the future: national research programs for the next generation of bridge design and maintenance in Korea" (Wednesday, October 20, 9:30-10:00, Room A)

- **Hajime Okamura**, *Kochi University of Technology, Kochi, Japan*

"Maintenance and management of concrete bridges" (Thursday, October 21, 8:30-9:00, Room A)

- **Andrzej Nowak**, *University of Michigan, Ann Arbor, MI, USA*
"Calibration of bridge design code" (Thursday, October 21, 9:00-9:30, Room A)

- **Riccardo Zandonini**, *University of Trento, Trento, Italy*
"Bridge management systems for medium-sized local agencies: notes from an Italian experience" (Thursday, October 21, 9:30-10:00, Room A)

Special Sessions

TuM-A: Asset Management of Infrastructures

Hitoshi Furuta, Kansai University, Takatsuki, Japan
Makoto Kaneuji, Kajima Corporation, Tokyo, Japan

WE-I: Bridge Assessment: Some Italian Studies

Riccardo Zandonini, University of Trento, Trento, Italy

WE-H & ThM-H: Bridge Health Monitoring

Emin Aktan, Drexel University, Philadelphia, PA, USA

WE-A: Bridge Management Systems in Operation

Paul Thompson, Castle Rock, Colorado, USA

TuA-J: Bridge Scour

Paulo Cruz, University of Minho, Guimaraes, Portugal

TuM-C2 & TuA-C2: Bridge Testing and Assessment

Fernando Branco, Technical University of Lisbon, Lisbon, Portugal

ThA-C1: Cable-Stayed Bridges: Case Studies

Ayaz Malik, Rensselaer Polytechnic Institute, Troy, NY, USA

ThM-C1: Dynamics and Field Testing of Bridges

Hani H.A. Nassif, The State University of New Jersey, Piscataway, NJ, USA

WA-J: Emerging Strategies for Durability Analysis and Service Life Assessment of Bridges

Fabio Biondini, Politecnico di Milano, Milan, Italy

TuE-I: The European Funded Research Programme: Toward Knowledge Integration

Livia Pardi, Autostrade, Rome, Italy

TuM-I: Experience with Probability-based Assessment of Bridges

John Bjerrum, The Danish Road Directorate, Ministry of Transport, Copenhagen, Denmark

TuE-J: High-Performance Materials for Bridges

Hani H.A. Nassif, The State University of New Jersey, Piscataway, NJ, USA

TuM-J: Identification, Modeling, Analysis and Control of Uncertainties in Design of Large Span Bridges

Pier Giorgio Malerba, Technical University of Milan, Milan, Italy

TuA-I: Implemented Probability-based Maintenance Management of Bridges in Denmark

Joern Lauridsen, The Danish Road Directorate, Ministry of Transport, Copenhagen, Denmark

TuA-A: Life Cycle Maintenance Models

Jan van Noordwijk, HKV Consultants, Lelystad, The Netherlands

WM-I & WA-I: Monitoring-Based Maintenance for Bridge Management and Safety

Sunaryo Sumitro, Keisoku Research Consultant, Co., Tokyo, Japan

WA-A: New Trends in Bridge Management

Rade Hajdin, University of Pennsylvania, Philadelphia, Pennsylvania, USA

WM-H: Political and Other Societal Issues of Life-Cycle Costing

Ross B. Corotis, University of Colorado, Boulder, CO, USA

ThA-H: Railway Bridge Rehabilitation

Masahiro Sakano, Kansai University, Suita, Japan

WM-J: Safety of Box Girder Bridges

Rene Maquoui, University of Liege, Liege, Belgium

WE-C1: Safety of Bridges Subjected to Extreme Loading Events

Michel Ghosn, City University of New York, NY, USA

WE-C2: Strengthening of Existing Bridges

Wayne Klaiber, Iowa State University, Ames, IA, USA

WA-H: IASC Special Session: Structural Health Monitoring of Bridges

Raimondo Betti and Andrew Smyth, Columbia University, New York, USA

TuM-H & TuA-H: Structural Retrofit to Wind-induced Vibration

Masaru Matsumoto, Kyoto University, Kyoto, Japan

TuE-A: Total Asset Management

James Cooper, Federal Highway Administration, Retired, Bridge Technology Consultant
Yozo Fujino, University of Tokyo, Tokyo, Japan

Presentation Guidelines

Please note that each presentation time is 20 minutes including 5 minutes discussion. Laptop PC (MS Windows) with Power Point 2003 and Acrobat Reader 6 will be available at each Session room. The presenters are requested to bring their CD-ROM containing the presentation files either to the session room where your presentation is scheduled or to the Congress Secretariat (Room F) at least 3 hours before your session starts. Assistants will be there to assist with the uploading of the presentations to the Laptop PC. No personal computers will be allowed to connect to the LCD projector for making presentations. (You may bring e.g. USB Key Memory, but the Secretariat office can not guarantee that the presentation files are surely uploaded to the Laptop PC at each Session room.)

Each Session room is equipped with an overhead projector, a Laptop PC, and a LCD projector. If you need a standard 35mm slide projector or any special facilities for your presentation, please contact the Secretariat at Room F at least one day in advance.

Please fill out the "Speaker Information Sheet" before your session, and submit it to the chairs of your session at least 5 minutes before your session starts.

Social Program

The social program includes:

- **Welcome Reception**, Monday, October 18, 18:00-20:00 (Banquet Hall Swan) featuring Japanese exciting dance from Kishiwada city (south of Osaka prefecture).
- **Banquet**, Wednesday, October 20, 19:30-22:30 (Banquet Hall Sakura, ticketed) featuring Classic music by "Ensemble Civil"

All registered participants and accompanying persons are welcome to the Welcome Reception and Banquet; additional tickets for Banquet for registrants with student fee are available through the registration desk (Fee: JPY 10,000). Those who wish to have vegetarian foods for Banquet must report to the registration desk by Wednesday, October 19.

Committee Meetings

- **General Assembly of IABMAS**
Wednesday, October 20, 18:15-18:45 (Room A)
- **ISHMII**
Wednesday, October 20, 14:00-16:00 (Room 510)
- **Bridge Health Monitoring Committee of IABMAS**
Thursday, October 21, 10:00-12:00 (Room 510)
- **Bridge Management Committee of IABMAS**
Thursday, October 21, 12:10-14:00 (Room 510)

Technical Tours

TT-1. Akashi Kaikyo Bridge

Date: Friday, October 22, 13:00 - 22:00

Fee: JPY 9,000 (Dinner included)

The Akashi Kaikyo Bridge is a suspension bridge which connects Awaji island with the main island of Japan. The length of the whole bridge is 3,910m with the center span of 1,991m which is the world longest. Participants will be guided to the top of towers, if the weather condition allows.
Please pick up your ticket at inquiry desk.

TT-2. Osaka Bay Cruise

Date: Friday, October 22, 13:00 - 19:30

Fee: JPY 3,000 (Dinner included)

Participants will ride on the Luxury cruise boat owned by Osaka city government at the Tempozan port of Osaka. The ship will guide you to a number of beautiful and unique bridges, including Yumemai floating bridge - the world's first floating swing arch bridge, as you see on the front cover of the book of abstracts.
Please pick up your ticket at inquiry desk.

Accompanying Person's Program

Jidai Festival

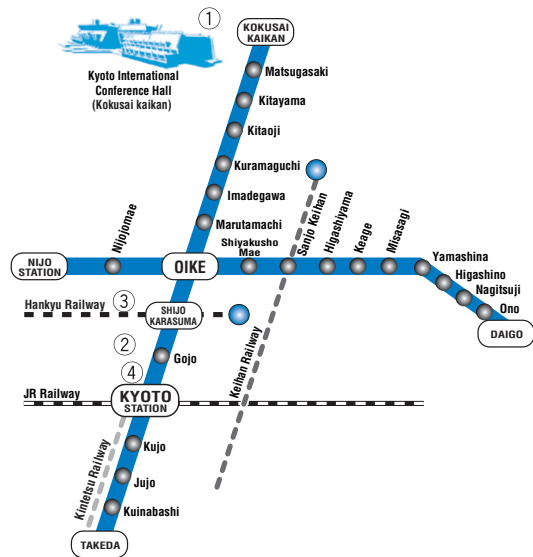
Date: Friday, October 22, 13:30 - 16:00

Fee: JPY 3,000

This is a procession that illustrates the costumes of residents of Kyoto from the earliest days (year 794) to the Meiji period of the late nineteenth century. It is one of the three great processions in Kyoto each year. There are thousands in the parade, all in costume. You can see the parade at the reserved seats in the Heian Shrine. Fee is including one-way transfer from each Hotel to Heian Shrine at 13:30. After the parade, please take the subway to your hotel.
Please pick up your ticket at inquiry desk.

Access to the Conference Venue

The journey from Kansai International Airport to Kyoto Station by Kansai Airport Express train "HARUKA" takes around 75 minutes (Fare JPY 2,980). From Kyoto Station, Kyoto International Conference Hall (Kokusai Kaikan) is merely a 20-minute ride on the Subway Karasuma Line. The Subway is also easily reached from the Shinkansen (Bullet Train) platform of Kyoto Station.



- ① **Kyoto Takaragaike Prince Hotel** (5 min. walk from Kokusai-kaikan Station)
- ② **Aranvert Hotel Kyoto** (3 min. walk from Gojo Station)
- ③ **Maruko Inn Kyoto** (5 min. walk from Shijo Station)
- ④ **Hotel Hokke Club Kyoto** (1 min. walk from JR Kyoto Station)

Contact Information

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Tuesday Morning (TuM), October 19, 2004

		Concurrent Technical Sessions: TuM-A to TuM-K						
		TuM-A (Room A)	TuM-C1 (Room C1)	TuM-C2 (Room C2)	TuM-H (Room H)	TuM-I (Room I)	TuM-J (Room J)	TuM-K (Room K)
8:20-9:00		Opening Ceremony (Room A)						
9:00-10:30		Keynote Lectures (Room A)						
		Chairs: S.-P. Chang						
		S. B. Chase						
10:30-11:00		Coffee Break						
11:00-13:00		Concurrent Technical Sessions: TuM-A to TuM-K						
TuM-A (Room A)	TuM-C1 (Room C1)	TuM-C2 (Room C2)	TuM-H (Room H)	TuM-I (Room I)	TuM-J (Room J)	TuM-K (Room K)		
Special Session Asset Management of Infrastructures Chairs: H. Furuta (Organizer) M. Kaneuji (Organizer)	Measurement and Monitoring (1) Chairs: C. Cremona J. Figueiras	Special Session Bridge Testing and Assessment (1) Chairs: F. A. Branco (Organizer) E. Yamaguchi	Special Session Structural Retrofit to Wind-induced Vibration (1) Chairs: M. Matsumoto (Organizer) P. C. Buckland	Special Session Experience with Probability-based Assessment of Bridges Chairs: J. Bjerrum (Organizer) J. S. Jensen	Special Session Identification, Modeling, Analysis and Control of Uncertainties in Design of Large Span Bridges Chairs: P. G. Malerba (Organizer) G. Mancini	Design and Analysis (1) Chairs: K. C. Chang K. Sugii		
Application of privatized asset management to urban roadways - a case study of Washington, DC, USA N. J. Masucci	Monitoring of the new bridge assembling technology M. Lagoda and P. Olaszek	Heavy trucks and structural safety of bridges J. R. Correia and F. A. Branco	The wind induced response of Kessok bridge J. S. Owen	Danish guideline for probability-based assessment of bridges I. Enevoldsen, M. Sloth and J. Lauridsen	On the structural analysis and design of cable-stayed and suspension bridges F. Biondini, M. Di Domizio and P. G. Malerba	Cable force analysis of Gi-Lu cable-stayed bridge after Gi-Gi earthquake Z. K. Lee, K. C. Chang, C. H. Loh and C. C. Chen		
Study on maintenance investment plan regarding to road facilities of Osaka prefecture H. Sato	Long-term monitoring of prestressing strands in post-tensioned concrete bridges and structures V. V. Herrero and J. R. Casas	The importance of bridge load tests J. Ferreira and F. A. Branco	Wind-induced motion of the Longs Creek Bridge and the Commodore Barry Bridge R. L. Wardlaw	Application of probability-based assessment of railway bridges in Sweden B. Paulsson, F. K. E. Axbag and I. Enevoldsen	Structural analysis and design of long span suspension bridges with regards to nonlinearities, uncertainties, interactions and sustainability F. Bontempi, L. Catallo and L. Sgambi	Bending stiffness analysis of the main cables of cable-supported bridges T. Grigorjeva, A. Iuozapaitis and Z. I. Kamaitis		
Optimal maintenance planning of bridge structures based on life-cycle cost and asset management H. Furuta, T. Kameda and D. M. Frangopol	An integrated system for structural health monitoring - application to the Sorraia River Bridge J. Figueiras, C. Félix, J. C. Matos and H. Sousa	Better bridge assessment by monitoring H. Falkner and V. Henke	A study on the wind-induced vibration in parallel suspenders and its countermeasure K. Hata, M. Kitagawa and T. Hanai	Probabilistic-based load and capacity assessment of pile foundation M. Sloth, J. B. Kroon, P. S. Kristensen, E. S. Larsen and E. Stoltzner	Effect of rheological parameter uncertainties on bridge design L. Giordano, G. Mancini and A. Recupero	Maintenance and reliability analysis for cable system of suspension bridge I. Yamada and K. Sumi		
Application of a new metal spraying system for steel bridge Part 1. An outline T. Kondo, S. Daito, A. Yamazaki and S. Okuno	Target reliability index regarding monitoring systems A. Strauss and K. Bergmeister	Bridge load rating for superloads using testing B. M. Phares, T. J. Wipf, F. W. Klüber, D. L. Wood and S. D. Neubauer	Wind-induced vibration and control of Tokyo Bay Aqua-Line bridge girder Y. Yoshida and Y. Fujino	Probabilistic-based assessment of the Kløvtofte bridges A. J. O'Connor, I. Enevoldsen and J. Bjerrum	A simple formula for the flutter instability of long span bridges M. Como, S. Del Ferraro and A. Grimaldi	Soundness investigation of suspender ropes of the suspension bridge which has passed 20 years M. Nakamura, T. Saito and T. Sugimoto		
Application of a new metal spraying system for steel bridge Part 2 Evaluation of the system and a real construction T. Kondo, H. Matsuno, A. Yamazaki and S. Okuno	Condition evaluation using vibration frequency measurements of slender members A. Turer and M. Kaynak	Static and dynamic tests of Salgueiro Maia cable-stayed bridge L. O. Santos, J. Rodrigues, X. Min and J. A. Fernandes	Countermeasure for suppression of wake galloping in stay cables of the Yobuko Bridge Y. Kubo	Probability-based capacity assessment of the Zárate-Braza Largo Bridges during rehabilitation D. L. Hommel, C. A. Priato, M. Sloth and M. H. Faber	A parametric deformability analysis of long span bridge schemes under moving loads D. Bruno, V. Colotti, F. Greco and P. Lonetti	Estimation of tension forces of assembly stay cables connected with massive anchorage block W. Jeong and N. S. Kim		
A case study on asset management for concrete bridges Y. Otani, H. Fujii, Y. Takahashi, M. Kaneuji and H. Furuta								

Tuesday Afternoon (TuA), October 19, 2004

13:00-14:00		Lunch Break				
14:00-15:40		Concurrent Technical Sessions: TuA-A to TuA-K				
TuA-A (Room A)	TuA-C1 (Room C1)	TuA-C2 (Room C2)	TuA-H (Room H)	TuA-I (Room I)	TuA-J (Room J)	TuA-K (Room K)
<p>Special Session Life Cycle Maintenance Models</p> <p>Chairs: J. M. van Noortwijk (Organizer) H. Sugimoto</p> <p>Spatial variability of corrosion-induced damage and life-cycle cost analysis of RC bridge decks M. G. Stewart</p>	<p>Measurement and Monitoring (2)</p> <p>Chairs: M. Ohtsu H. Wiggenhauser</p> <p>Strain and vibration measurements of a cable-stayed pedestrian bridge A. Turer and T. Ozerkan</p>	<p>Bridge Testing and Assessment (2)</p> <p>Chairs: J. Almeida-Fernandes A. L. Materazzi</p> <p>Concrete bridge management - Inspection, assessment and evaluation J. de Brito and F. Branco</p>	<p>Special Session Structural Retrofit to Wind-induced Vibration (2)</p> <p>Chairs: Y. Kubo K. L. Wardlaw</p> <p>Countermeasures against cable vibration on the Meiko Nishi Bridge H. Miyauchi and T. Kadotani</p>	<p>Special Session Implemented Probability-based Maintenance Management of Bridges in Denmark</p> <p>Chairs: J. Lauridsen (Organizer) I. Enevoldsen</p> <p>Bridge owner's benefit from bridge maintenance management with probabilistic approaches J. Bjerrum, M. Sloth and F. M. Jensen</p>	<p>Special Session Bridge Scour</p> <p>Chairs: P. J. S. Cruz (Organizer) J. Weissmann</p> <p>Field evaluation of methods for monitoring bridge scour J. Davis, H. Nassif and A. O. Ertekin</p>	<p>Design and Analysis (2)</p> <p>Chairs: C. Miki B. Tällsten</p> <p>Analytical study on ductility characteristics of a rigid framed steel pier focused on shearing elasto-plastic behavior of beam member in plane direction H. Suzuki, T. Naganuma, H. Kanaji, Y. Adachi and S. Okashiro</p>
<p>Gamma process model for time-dependent structural reliability analysis M. D. Pandey and J. M. van Noortwijk</p>	<p>Development of IVE algorithm for monitoring of bridge's vertical displacement K. T. Park, H. S. Park, S. H. Kim and K. W. Lee</p>	<p>The design of a bridge for a 120 years service life F. A. Branco</p>	<p>The cables strategy for the Normandy Bridge O. Flamanq, J. Biétry and M. Virlogeux</p>	<p>Implemented cases of probability-based management of bridge maintenance F. M. Jensen, I. Enevoldsen, J. Bjerrum and E. Stoltzner</p>	<p>Reliability of bridge piers under local live-bed scour M. Chosn, J. Wang and P. A. Johnson</p>	<p>An alternative method for connecting of existing simple-supported steel girder bridges A. Kurita, S. Matsui and K. Muto</p>
<p>Lifespan extension of bridges by advanced diagnostics and bridge management systems K. Brandes and A. Miyamoto</p>	<p>Dynamic monitoring of a high speed railway bridge C. Cremona, P. Hallak, A. Alvandi, D. Ducret, M. H. Inchauspé and L. Dieleman</p>	<p>Bridges safety control in real time V. Marecos, L. O. Santos and F. Branco</p>	<p>Structural retrofit to rain-wind induced vibration of stay-cables of the Aratsu Bridge C. Tanaka, S. Nakaya, S. Uehira, J. Hirai and T. Yoshimura</p>	<p>Probability-based maintenance management of the 400 km railway line Copenhagen - Padborg in Denmark J. S. Jensen, M. Sloth and O. B. Ulstrup</p>	<p>Local scour in piers and abutments: a persisting problem. The Magarola River bridge, a case of study A. Bateman and J. R. Casas</p>	<p>Analysis of composite stub columns W. O. Oyawa, E. Watanabe and K. Sugiura</p>
<p>Repair cost model and optimum management system for bridges in Hokkaido H. Sugimoto, T. Watanabe and K. Akadomari</p>	<p>Experimental study on stress measurement of steel bridges using magnetostriction effect R. Murai, E. Yanagisawa, S. Oka, S. Nakaya and M. Sakate</p>	<p>Weigh-in-motion by continuous skew steel-plate-girder bridge E. Yamaguchi, K. Matsuo, S. Kawamura, Y. Kobayashi, M. Mori, K. Momota and T. Nishinohara</p>	<p>Cable vibration control countermeasures and structural health monitoring system design of Sutong Bridge L. Sun, Q. Zhang, A. Chen and Z. Lin</p>	<p>Decision support for inspections using a probabilistic approach T. H. Johnsen, M. Sloth and M. H. Faber</p>	<p>Bridge scour monitoring in Texas J. Weissmann and M. Diaz</p>	<p>Design guideline for CFRP strengthening of concrete structures B. Tällsten</p>
<p>Combination of probabilistic maintenance actions for minimum life-cycle cost of deteriorating bridges A. Petcherdchoo, L. C. Neves and D. M. Frangopol</p>	<p>Development of the low power consumption dynamic stress-frequency monitoring system by the piezo film sensor H. Katsura, T. Arakawa, T. Yamagami and K. Fumoto</p>	<p>Reliability of the dynamic methods for evaluating structural concrete bridge integrity A. L. Materazzi and M. Breccolotti</p>	<p>Integration of plastic and probabilistic methods in bridge maintenance management A. J. O'Connor, I. Enevoldsen, J. Bjerrum and J. Lauridsen</p>	<p>Decision support for inspections using a probabilistic approach T. H. Johnsen, M. Sloth and M. H. Faber</p>	<p>Bridge scour monitoring in Texas J. Weissmann and M. Diaz</p>	<p>Shear strength effect by CFRP grids on the web surface of prestressed concrete beams A. Yonekura, H. Ito, Y. Idehara, H. Kurokawa, K. Era, T. Mihara and K. Zaitzu</p>

Tuesday Evening (TuE), October 19, 2004

15:40-16:10		Coffee Break		TuE-A (Room A)		TuE-C2 (Room C2)		TuE-H (Room H)		TuE-I (Room I)		TuE-J (Room J)		TuE-K (Room K)	
16:10-18:30		Concurrent Technical Sessions: TuE-A to TuE-K		Measurement and Monitoring (3)		Loads and Testing (1)		Seismic Analysis and Retrofitting (1)		Special Session The European Funded Research Programme: Toward Knowledge Integration		Special Session High-Performance Materials for Bridges		Design and Analysis (3)	
Chairs: Y. Fujino (Organizer) H. E. Klatner		Chairs: F. Ansari S. Hirose		Chairs: P. Grundy A. Nowak		Chairs: C. Modena M. Saiidi		Chairs: L. Pardi (Organizer) H. Wenzel		Chairs: H. H. Nassif (Organizer) M. Kaszynska		Chairs: H.-N. Cho S. Matsui			
<p>A United States vision for total highway asset management A. R. Kane and J. L. Aldayuz</p> <p>The role of economic analysis in making engineering and political decisions W. E. Robert, H. B. Weinblatt and A. A. Pradhan</p> <p>The role of objective condition assessment for bridge asset management programs P. J. Vanderzee</p> <p>Current status of U.S. bridge and tunnel management models G. P. Romack and R. K. Allaney</p> <p>Total asset management in the Netherlands H. E. Klatner and J. J. van der Vusse</p> <p>Development of pavement and paint management system for asset management K. Izumi, F. Kogure, K. Otsuka and T. Okada</p> <p>Asset management of small railway companies in Japan M. Abe and K. Kaito</p>		<p>Sensoring corrosion - the Danish way R. E. Sørensen, B. Buhr and T. Frølund</p> <p>Development and application of echo-methods for NDE of post tensioned concrete bridges H. Wiggerhauser, A. Garde, Ch. Kohl, Ch. Maierhofer, M. Krause and D. Streicher</p> <p>Ultrasonic wave radiation from a linear phased array transducer S. Hirose and K. Kimoto</p> <p>Monitoring service loading by BWIM K. Yamada and T. Ojio</p> <p>Serially multiplexed fiber optic acoustic emission sensor for structural health monitoring of post tensioned structures Y. Liang and F. Ansari</p>		<p>Sustainable bridges - Assessment for future traffic demands and longer lives I. Olofsson and L. Elfgren</p> <p>Development of evaluation system for load capacity of concrete bridges incorporating load and environmental factors B. H. Oh and D. W. Kim</p> <p>Load carrying capacity and collapse mechanisms of masonry arch bridges A. Brencich, A. Cavicchi and L. Gambarotta</p> <p>Construction of a fully polymer composite bridge for heavy traffic loads B. Täljsten and I. Olofsson</p> <p>Multiple vehicle presence on shorter span bridges P. Grundy and J. Grundy</p>		<p>Frictional damping effect of the hybrid isolation bearing system H. Iemura, Y. Takahashi, Y. Adachi, F. Yasuda, A. Shimura and M. Nagasawa</p> <p>Seismic retrofit of cable-stayed bridges with isolators and dampers H. Iemura and M. H. Pradono</p> <p>Static and seismic performance of typical RC arch bridges G. Zanardo, C. Pellegrino and C. Modena</p> <p>Innovative seismic retrofitting technique for bridges with wall type piers in Illinois M. Dicleli and R. Hindi</p> <p>Seismic retrofit of bridge bents with diamond shape RC columns M. Saiidi, A. Itani, K. Sureshkumar and S. Ladhkany</p>		<p>Risk and reliability in surface transportation L. Pardi, N. Shetty and C. Guedes Soares</p> <p>BRIDMO: An intensive advanced course on bridge monitoring P. J. S. Cruz</p> <p>The European funded project SAMCO - structural assessment, monitoring and control H. Wenzel and L. Pardi</p> <p>SAMARIS project - advanced materials for the rehabilitation of highway structures in Europe A. Znidarič, E. Denarié, M. Richardson and R. J. Woodward</p> <p>Structural evaluation and repair methodologies of damaged concrete structures affected by reinforcement corrosion (Oral Presentation) C. Andrade, D. Izquierdo, J. Rodriguez, L. M. Ortega</p>		<p>Practical considerations for the implementation of high performance materials in bridges H. A. Capers, Jr., J. A. Lopez, R. Lewis and H. Nassif</p> <p>Use of CFRP reinforcement for bridges D. G. Taggart, G. Tsiasas, A. U. Nair, A. F. Wilson, T. J. Kim, H. Yoshida, M. Yokoo, K. Yagi and K. Horii</p> <p>Self-consolidating concrete for the repair of bridge structures M. Kaszynska</p> <p>Creep and shrinkage of high-performance concrete in bridges H. H. Nassif and N. Suksawang</p> <p>Durability performance of concrete bridge piers made with metakaolin and latex mixes A. Camões, P. J. S. Cruz, S. Jalali, R. M. Ferreira and P. Cunha</p>		<p>Sensitivity of random variables for impact factor of RC decks of highway bridges and probabilistic assessment C. W. Kim and M. Kawatani</p> <p>Advanced reinforced concrete for the improvement of bridges E. Brühwiler, K. Habel and E. Denarié</p> <p>Development of a new evaluation method for efficiency of waterproofs on RC slabs T. Koura, H. Onishi and S. Matsui</p> <p>Damage simulation to an RC slab with electric discharging shock force method S. Iwata, H. Maehata and H. Arai</p> <p>Drain simulation model for surface of paved road bridge using cellular automaton technology K. Yasuda, W. Shiraki, M. Dogaki and Y. Mikumo</p>			

Wednesday Morning (WM), October 20, 2004

Keynote Lectures (Room A) **A. H.-S. Ang:** Modeling and analysis of uncertainties for risk-informed decisions in engineering - with application to bridges
Chairs: M. C. Tang **P. D. Thompson:** Bridge management systems: where should we go from here?
P. Thoft-Christensen **H.-M. Koh:** Preparing for the future: national research programs for the next generation of bridge design and maintenance in Korea

10:00-10:30 Coffee Break

10:30-12:10 Concurrent Technical Sessions: WM-A to WM-K

WM-A (Room A)	WM-C1 (Room C1)	WM-C2 (Room C2)	WM-H (Room H)	WM-I (Room I)	WM-J (Room J)	WM-K (Room K)
Reliability and Risk Management Chairs: A. H.-S. Ang E. Brühwiler Probability based assessment of acceptable precast girders deflections for proof load testing D. Wisniewski, P. J. S. Cruz and A. A. R. Henriques Statistical accident analysis by sequential probability ratio tests in operating systems S. Hanayasu A vulnerability assessment concept for a road link with multiple bridges B. T. Adey and E. Brühwiler	Measurement and Monitoring (4) Chairs: J. P. Conte A. Mufli Proposals of additional effective measures for long-life bridges of uncoated weathering steel in Gifu prefecture E. Furusawa, M. Sakaida, K. Hayashi, S. Nara and S. Murakami Modelling and monitoring the launching of the Chiapas bridge superstructure R. Gómez, D. Muria, J. A. Escobar, R. Sanchez, D. Muñoz and R. Vera Maintenance for steel pipelines attached bridges Y. Ogawa and A. Takahashi	Loads and Testing (2) Chairs: A. Del Grosso E.-S. Hwang Characteristics of axle loads and total weights of large vehicles measured by a W.I.M method at slab concrete cracks S. Ito, S. Matsui and H. Tanigaki Punching shear capacity of RC slabs with lightweight concrete H. Higashiyama, S. Matsui and Y. Uchida Temperature loads for concrete slab bridges E.-S. Hwang and J. J. Lee	Special Session Political and Other Societal Issues of Life-Cycle Costing Chairs: R. B. Corotis (Organizer) J. M. van Noordwijk Life-cycle cost design - Why is it not being used? P. Thoft-Christensen Societal trade-off decisions and life-cycle costs R. B. Corotis Implications of the long term bridge performance program on life cycle costing S. B. Chase	Special Session Monitoring-Based Maintenance for Bridge Management and Safety (1) Chairs: D. Inaudi T. Sato Acoustic monitoring and stress measurements for deterioration assessment in concrete and steel structures Th. Le Diouon and S. Sumitro Infrastructure management database system Th. Le Diouon Long-term monitoring on external tendon post-tensioned box girder bridges by utilizing EM sensory technology H. Sakai, T. Uesugi, H. Yasumori, S. Sumitro and M. L. Wang	Special Session Safety of Box Girder Bridges Chairs: R. Maquoi (Organizer) I. Olofsson Prediction of ultimate shear resistance of non-prismatic tapered plate girders using data mining techniques P. J. S. Cruz, H. Quintela and M. F. Santos Structural and fatigue behaviour of horizontally lying headed studs in bridges U. Kuhlmann and K. Kürschner Structural safety during launching of large steel box-girder bridges V. de Ville de Goyet, Y. Duchêne, R. Maquoi and F. Bachy	Design and Analysis (4) Chairs: S. F. Masri N. Shiraishi A three-dimensional model for the analysis of bridges under moving trains incorporating their mutual interaction M. Majka, M. Hartnett and D. O'Dwyer Comparison of time-frequency analysis based methods for modal parameter extraction of bridge structure B. F. Yan, A. Miyamoto and X. D. Shao Behavior of bridge with deteriorated bearing for moving load G.-H. Lee, I.-C. Choi and J.-H. Yun High accurate estimation of structural frequency with AR model and shaking-table test T. Okabayashi and T. Okumatsu Safety of continuous concrete bridges supported on bi-linear isolation bearings M. Jara and J. R. Casas
Effects of uncertainties on the reliability of a bridge connecting two offshore platforms D. de León, A. H.-S. Ang and D. Campos Time-variant finite element reliability analysis of bridge structures T. Haukaas	Monitoring of shear cracks and the assessment of strengthening on two newly-built light-rail bridges in Stockholm H. Sundquist and G. James Long-term monitoring of a highway bridge in Portugal P. J. S. Cruz, I. Valente and D. F. Wisniewski	A corrosion exposure test of new corrosion protection for steel bridge M. Amako, T. Suzuki and H. Watanabe Evaluating effectiveness of electrochemical chloride extraction process to reduce corrosion in reinforcing steel in bridge deck H. Lee, J. Kim, R. Edwards and S. K. Jacobsen	Life-cycle-cost-based bridge management in the Netherlands H. E. Klatter, A. C. W. M. Vrouwenvelder and J. M. van Noordwijk Evaluation of Maintenance Necessity Level (MNL) for aging bridges M. Sato, S. Kato, K. Ikeda, S. Mikami, T. Oshima and I. Tamba	Global concrete structure monitoring by utilizing fiber optic sensor S. Kurokawa, K. Shimano, S. Sumitro and M. Suzuki Influence of monitoring accuracy and frequency on life cycle cost optimization M. Tomimaga, Y. Kato, S. Sumitro and Y. Honjo	Fatigue evaluation and reinforcement for cracks of box girder bridge with steel deck based on actual live loads H. Shimizu, A. Isoda, T. Yamagami and Y. Kawakami Buckling failure of steel box girder web due to fire H. Gil, S. Kang and C. Bae	

Wednesday Afternoon (WA), October 20, 2004

12:10-13:30		Lunch Break		WA-C2 (Room C2)		WA-H (Room H)		WA-I (Room I)		WA-J (Room J)		WA-K (Room K)	
13:30-15:30		Concurrent Technical Sessions: WA-A to WA-K		WA-C1 (Room C1)		WA-H (Room H)		WA-I (Room I)		WA-J (Room J)		WA-K (Room K)	
WA-A (Room A)		WA-C1 (Room C1)		WA-C2 (Room C2)		WA-H (Room H)		WA-I (Room I)		WA-J (Room J)		WA-K (Room K)	
<p>Special Session New Trends in Bridge Management</p> <p>Chairs: R. Hajdin (Organizer) A. Miyamoto</p> <p>Modeling bridge network performance - enhancing minimal cost policies R. W. Shepard, M. B. Johnson, W. E. Robert and A. R. Marshall</p> <p>Development of an integrated life-cycle management system for bridge structures A. Miyamoto</p> <p>A decision support concept for asset maintenance planning P. D. Thompson and W. A. Hyman</p> <p>Incorporating natural hazards into bridge management systems B. T. Adey and R. Hajdin</p> <p>Proposal of data management architecture for bridge management system Y. Mizuno, Y. Fujino and M. Abe</p> <p>Application of an extended Cramer-Lundberg model to a maintenance scheduling problem H. Tanaka, M. Toyoda-Makino and Y. Ichida</p>	<p>Measurement and Monitoring (5)</p> <p>Chairs: H.-M. Koh G. Muscolino</p> <p>Web-based, fully automated remote monitoring of structures J. D. Bakker, F. J. Postema and U. Förster</p> <p>Noise reduction for embedded wireless strain sensor using time domain gating J. Chuang, D. J. Thomson and G. E. Bridges</p> <p>Online bridge linguistic monitoring methods based on Mamdani fuzzy inference systems D. Dan, L. Sun and W. Cheng</p> <p>Developing a web-based simulation system for bridge health monitoring and maintenance A. Alan and Y. Fujino</p> <p>Smart monitoring of bridge maintenance using fiber bragg grating sensors K.-H. Kwak, S.-J. Cho and S.-J. Lee</p>	<p>Loads and Testing (3)</p> <p>Chairs: M. K. Chryssanthopoulos T. Yamaguchi</p> <p>Static breaking test of rupture controllable side block of bridge bearings M. Sakaida, M. Yoshida, M. Matsumura and T. Kitada</p> <p>An experimental study on load carrying capacity of friction type bolted joints subjected to thermal loading M. Suzuki, O. Minata, Y. Ishihara and A. Muranaka</p> <p>Experimental studies on shear connection between steel and lightweight concrete I. Valente and P. J. S. Cruz</p> <p>Nondestructive testing of bridges strengthened by external prestressing using distributed fiber optic sensing W. Zhang, B. Shi, J. Q. Gao, Y. Ding and H. Zhu</p> <p>Visualization of SH wave ultrasonic testing for surface braking crack M. Yamada, K. Hiramoto, K. Nakahata and M. Kitahara</p>	<p>Special Session Structural Health Monitoring of Bridges - sponsored by IASC</p> <p>Chairs: R. Betti (Organizer) A. W. Smith (Organizer)</p> <p>Design and implementation of a web-enabled real-time monitoring system for civil infrastructures S. F. Masri, L.-H. Sheng, M. Wahbeh, J. Caffrey, R. Nigbor and A. Abdel-Ghaffar</p> <p>Structural health monitoring of a bench scaled cable structure J. M. Caicedo and S. J. Dyke</p> <p>Dynamic analysis of a long span suspension bridge H. Lus, R. Betti and S. F. Masri</p> <p>The potential of GPS and other displacement sensing for enhancing acceleration sensor monitoring array data by solving low frequency integration problems A. W. Smyth</p> <p>System identification of Vincent Thomas Bridge using simulated wind response data X. He, B. Moaveni, J. P. Conte, A. Elgamal and S. Masri</p>	<p>Special Session Monitoring-Based Maintenance for Bridge Management and Safety (2)</p> <p>Chairs: S. Sumitro (Organizer) H. Budelmann</p> <p>European perspective on monitoring-based maintenance D. Inaudi and A. Del Grosso</p> <p>New monitoring techniques for bridge tendons H. Budelmann, K. Hantiri, A. Holst and H.-J. Wichmann</p> <p>Health monitoring of a steel bridge under heavy load traffic R. G. Rohmann, S. Said and W. Schmid</p> <p>Maintenance of reinforced concrete by acoustic emission monitoring of corrosion M. Ohisu, M. Tanaka and Y. Tomoda</p> <p>Remaining life evaluation by fatigue detecting sensor F. Inamura, O. Muragishi, K. Nihei, T. Kobayashi, K. Ohgaki, Y. Kawaguchi and A. Umeda</p> <p>Investigation on concrete rust preventive agents using microorganisms N. Sato and S. Suzita</p>	<p>Special Session Emerging Strategies for Durability Analysis and Service Life Assessment of Bridges</p> <p>Chairs: F. Biondini (Organizer) F. Bontempi</p> <p>Tools for service life evaluation and optimal maintenance of concrete bridges F. Biondini, P. G. Malerba, F. Bontempi and D. M. Frangopol</p> <p>Evolutionary design of durable structures F. Biondini and A. Marchiondelli</p> <p>Assessment of residual life of corroded bridge beams L. Pardi, Z. Rinaldi and C. Valente</p> <p>Markovian modeling of the time-variant deterioration process of concrete structures F. Biondini, E. Garavaglia and F. Bontempi</p> <p>The credibility of lifetime assessment based on few experimental measurements E. Garavaglia and L. Sgambi</p> <p>Maintenance strategies in stone masonry railway bridges F. Martins, J. de Brito and F. Branco</p>	<p>Design and Analysis (5)</p> <p>Chairs: H. P. Günther T. Kitada</p> <p>Reassessment of a wrought iron railway bridge P. Grundy</p> <p>An investigation on cracking in the rigid steel pier P88 on Osaka-Nishinomiya line T. Suzuki, K. Wakatsuki, S. Uehira, H. Katou, M. Sakano and K. Horikawa</p> <p>Countermeasure using king-post cables against subsidence of PC box girder with central hinge T. Suzuki, K. Wakatsuki, H. Manabe and K. Sonoda</p> <p>A study on design method for prestressed concrete box girders with corrugated steel webs M. Kano and E. Watanabe</p> <p>Research of steel shell of a road bridge made of corrugated plates during backfilling D. Beben and Z. Manko</p> <p>Bridge alternatives for low-volume road bridges F. W. Klüber, T. J. Wipf, J. D. Doornink and T. F. Konda</p>							

Wednesday Evening (WE), October 20, 2004

15:30-16:00		Coffee Break				
16:00-18:00		Concurrent Technical Sessions: WE-A to WE-K				
WE-A (Room A)	WE-C1 (Room C1)	WE-C2 (Room C2)	WE-H (Room H)	WE-I (Room I)	WE-J (Room J)	WE-K (Room K)
Special Session Bridge Management Systems in Operation Chairs: P. D. Thompson (Organizer) M.-K. Söderqvist	Special Session Safety of Bridges Subjected to Extreme Loading Events Chairs: M. Ghosn (Organizer) K. Imai	Special Session Strengthening of Existing Bridges Chairs: W. Klalber (Organizer) V. Popa	Special Session Bridge Health Monitoring (1) Chairs: A. E. Aktan (Organizer) J. M. W. Brownjohn	Special Session Bridge Assessment: Some Italian Studies Chairs: R. Zandonini (Organizer) F. Vestroni	Chairs: A. Kurita C.-B. Yun	Chairs: Y. Fukumoto K. Sugiura
Case studies in the implementation of the Pontis bridge management system W. E. Robert and A. R. Marshall	Seismic risk analysis of highway bridges in combination with other extreme events M. Ghosn and J. Wang	Examples of increasing suspension bridge capacity P. C. Buckland	Condition and durability assessment of concrete bridge superstructure components A. M. U. B. Atanayaka and H. M. Aktan	Structural health monitoring based on dynamic measurements F. Vestroni, S. Vidali, F. dell'isola and M. N. Cerri	Applicability of damage estimation based on acoustic emission activity under loading to practical reinforced concrete bridge M. Shigeishi and M. Ohtsu	Strength characteristics of friction type bolted joints for fiber-reinforced composite structural members B. Abdullah, O. Minata, A. Muranaka and H. Katsumo
Project planning models for Florida's bridge management system P. D. Thompson and J. O. Sobanjo	Wind/fluid-induced hazard of bridges and other structures M. Matsumoto	Steel bridge rehabilitation using advanced composites A. Chacon, M. Chajes, M. Swinehart, T. Miller, D. Richardson and G. Wenzel	An innovative fiber optic sensor for cracking detection and monitoring A. D. de León, P. J. S. Cruz and C. K. Y. Leung	An experimental and theoretical study of rail irregularities and their effects on railway bridge dynamics B. Biondi, G. Muscolino, A. Recupero and A. Sofi	Void detection in grouted sheath in post-tensioning prestressed concrete by SIBIE N. Ata and M. Ohtsu	The development of the bearing plates anchor frame foundation A. Kishi, M. Kondo, T. Suzuki and A. Shimura
Experience in the Finnish bridge management system development M.-K. Söderqvist	Monitoring for the safety of bridges - starting with the ice forces D. N. Tiwari and T. G. Brown	Use of CFRP plates in the strengthening of steel girder bridges T. J. Wipf, B. M. Phares, F. W. Klaiber, Y. S. Lee, A. H. Al-Saidy, A. Abu-Hawash and C. Monk	Combining static and dynamic deformation monitoring with long-gauge fiber optic sensors D. Inaudi and B. Glisic	Dynamic-based assessment of a cable-stayed bridge C. Gentile	Non destructive evaluation of reinforced concrete by electrical resistivity measurement J.-F. Lataste, D. Breyse, C. Sirreix and M. Frappa	Experimental study on new type of composite panel point structure proposed for truss bridges Y. Suzuki, T. Yamaguchi, K. Hashimoto, T. Kitada and K. Sugiura
A study on the Hanshin Expressway bridge management system, focusing on the pavement N. Kanjo, S. Nozaki and M. Jido	Experience with extreme loading specifications for winds and earthquakes used for reliability assessment of the Honshu-Shikoku Bridges: a brief retrospective K. Imai and D. M. Frangopol	Earthquake performance and retrofit of bridge column/pedestal piers N. Johnson, M. Sairidi, A. Itani and S. Ladhkany	Health monitoring of a FRP composite bridge augmented by use of web based and wireless technologies H. Guan, V. M. Karbhari and C. Sikorsky	A simulation procedure for the reliability assessment of structural systems subject to deterioration M. Ciampoli and C. Paulotto	NDT integrity and load carrying assessment of concrete bridges S. Colombo, I. C. Main, M. Shigeishi and M. C. Forde	Mechanical characteristics of rigidly connected girders and concrete piers with perfbond rib shear connectors H. Iwasaki and T. Nishido
A systems method for defining 'best bridge maintenance management practice' P. S. McCarter	Laboratory testing of full scale GFRP repaired wooden piles H. H. Nassif, N. Suksawang, O. Ozkul, A. Maher and A. Sarmad	Global health monitoring: laboratory studies and field implementation on a long span bridge F. N. Catbas, K. Ciloglu, K. A. Grimmelmsan and A. E. Aktan	Damage assessment of the "Ponte delle Torri" in Spoleto F. Cluni, M. Giofrè and V. Gusella	Assessing the influences on bridge durability in Croatia J. Radić	Connection fixity effects on stress histories in riveted rail bridges B. Imam, T. D. Righiniotis and M. K. Chryssanthopoulos	Role of friction forces in preventing LTB of longitudinal steel beams of composite bridges S. Caramelli and P. Croce
The development of a computerized highway bridge management system in China D. J. Han, J. Du and Q. S. Yan	Unconventional method for bridge strengthening and widening V. Popa and M. Stanciu	Health monitoring of the New Benicia-Martinez Bridge Y. H. Chai, C. Zuritz, L.-H. Sheng, G. Murugesu, H. Strandgaard and K. Cormier	Maintenance of concrete bridge structures in a highly saline environment Y. Sano, K. Tsuru and T. Sugimoto	Maintenance of concrete bridge structures in a highly saline environment Y. Sano, K. Tsuru and T. Sugimoto		

18:15-18:45 **General Assembly (Room A)**

19:30-22:30 **Banquet (Banquet Hall Sakura)**

Thursday Morning (ThM), October 21, 2004

		ThM-A to ThM-K						
		ThM-A (Room A)	ThM-C1 (Room C1)	ThM-C2 (Room C2)	ThM-H (Room H)	ThM-I (Room I)	ThM-J (Room J)	ThM-K (Room K)
8:30-10:00	Keynote Lectures (Room A) Chairs: M. C. Forde N. Shiraishi	<i>H. Okamura: Maintenance and management of concrete bridges</i> <i>A. Nowak: Calibration of bridge design code</i> <i>R. Zandonini: Bridge management systems for medium-sized local agencies: notes from an Italian experience</i>						
10:00-10:30	Coffee Break							
10:30-12:10	Concurrent Technical Sessions: ThM-A to ThM-K							
ThM-A (Room A)	ThM-C1 (Room C1)	ThM-C2 (Room C2)	ThM-H (Room H)	ThM-I (Room I)	ThM-J (Room J)	ThM-K (Room K)		
Bridge Management Systems (1) Chairs: T. D. Everett R. W. Shepard The effects of bridge condition predictions on bridge system benefit optimization Y. Jiang	Special Session Dynamics and Field Testing of Bridges Chairs: H. H. Nassif (Organizer) M. Chajes Dynamics and field testing of Doremus Avenue bridge substructure N. Cucunski, M. Balic and H. H. Nassif	Repair and Strengthening (1) Chairs: W. Radomski T. Yoda Strengthening effects of bonding CFRP strips onto steel plates in tension K. Nozaka, T. Furukawa and K. Suzukawa Experimental study on strengthening of superannuated steel bridge girders by installing pre-tensioned CFRP sheets Ta. Kitada, M. Matsumura, To. Kitada, M. Hojo and H. Namiki	Special Session Bridge Health Monitoring (2) Chairs: H. M. Aktan T. Oshima Diagnostic load testing of a continuous, curved steel girder highway bridge M. W. Halling, P. J. Barr, K. C. Womack and S. P. Bott	Inspection and Prediction of Structural Performance (1) Chairs: M. Ciampoli M. G. Stewart Scanning NDT-methods for the inspection of highway structures P. Haardt, M. Krause, D. Streicher and H.-J. Krause	Damage Assessment - Strength, Durability and Fatigue - (2) Chairs: R. Sexsmith H. Suzuki Reliability deterioration prediction of an existing bridge using a probability-based analysis tool F. Akgül and D. M. Frangopol	Design and Analysis (7) Chairs: M. Kawatani R. Purvis Reliability-based thermal design criteria for concrete bridges M. A. Maes Lifetime reliability based life-cycle cost effective optimum design of steel bridges H.-N. Cho, K.-M. Lee, C.-J. Cha and J.-S. Chung		
Evaluation system for reinforced concrete bridges based on two performance indicators K. Kawamura, D. M. Frangopol and A. Miyamoto	Inelastic response of a steel girder bridge P. Quinn, M. Chajes, D. Mertz, T. Zoll and J. Volk	Experimental study on strengthening of superannuated steel bridge girders by installing pre-tensioned CFRP sheets Ta. Kitada, M. Matsumura, To. Kitada, M. Hojo and H. Namiki	Adaptive, robotic and mobile sensor systems for bridge monitoring D. Huston, J. Miller and B. Esser	A study of crack classification in concrete slabs by using pattern recognition methods Y. Mikumo, M. Hirokane, H. Furuta, Y. Kusunose and K. Yasuda	Deterioration rates of bridge elements in New York State A. K. Agrawal, A. Kawaguchi, G. Qian and S. Lagace	Lifetime reliability based life-cycle cost effective optimum design of steel bridges H.-N. Cho, K.-M. Lee, C.-J. Cha and J.-S. Chung		
A study of highway preservation operating system by using XML database K. Yasuda, Y. Mikumo and R. Imai	Dynamic analysis and testing of continuous span bridges under multiple trucks M. Cindy S. Yuksel and H. H. Nassif	Repair and reinforcement of structures T. P. Mendonça, V. Brito and P. Paulo	Uncertainty and similitude in field research K. A. Grimmelmsman and A. E. Aktan	Condition rating method for performance evaluation of existing RC bridges A. Shirakura, Y. Kawashima, Y. Yonezawa and H. Morikawa	Fatigue resistance evaluations for existing post-tensioned concrete bridges K. Zilch, E. Penka and R. Buba	A new approach to deflection analysis of cantilever beam bridges J. Radic, I. Cukov and D. Mestrovic		
Ordering system of retrofit priority for bridge piers utilizing neural network and genetic algorithm I. Sakuda, S. Katsuki, Y. Kajita, T. Soma and Y. Sonoda	Dynamic and static tests of prestressed concrete girder bridges in Florida M. A. Issa and M. A. Issa	Replacement of conventional bearings with sliding isolation bearings for seismic retrofitting of a long-span bridge H. Kanaji, Y. Takada, N. Suzuki, T. Mino, F. D. Cardenas and O. Azumaya	Health monitoring of California bridges M. Raghavendrachar, G. Murugesu, S. Ng and R. W. Shepard	Development of a periodic inspection system K. Ueda and T. Hirose	The effect of corrosion on concrete bridges C. Fang, K. Lundgren, M. Plos and K. Gylltoft	Assessment of the tunneling-induced effects on continuous bridges C. Zanardo, S. W. Jacobsz, E. Woods and D. Coughlan		
Procurement of bridge management based on functional requirements H. Sundquist, H. Mattsson and G. James	Field dynamic performance of an exceptional timber bridge C. Cremona, P. Hallak, F. Barbosa, J. Lavigne, J.-M. Dourthe, P. Coustelier and O. Moretti	Flexural strengthening of steel bridges and towers using high modulus CFRP materials D. Schnerch, B. Lanier, S. Rizkalla and A. Nakagoshi	Health monitoring of California bridges M. Raghavendrachar, G. Murugesu, S. Ng and R. W. Shepard	Condition rating method for performance evaluation of existing RC bridges A. Shirakura, Y. Kawashima, Y. Yonezawa and H. Morikawa	Fatigue resistance evaluations for existing post-tensioned concrete bridges K. Zilch, E. Penka and R. Buba	Lifetime reliability based life-cycle cost effective optimum design of steel bridges H.-N. Cho, K.-M. Lee, C.-J. Cha and J.-S. Chung	Ship impact assessment. Major railway bridges in Denmark K. V. Christensen, T. Arnbjerg-Nielsen and I. Enevoldsen	Application of neural network and Monte Carlo method for concrete durability analysis A. Tarighat

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13:30-15:30		Concurrent Technical Sessions: ThA-A to ThA-K				
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<p>Bridge Management Systems (2)</p> <p>Chairs: J. L. Aldayuz J. Bten</p> <p>The German approach to bridge management. Planning at network level P. Haardt and A. Stadler</p> <p>Bridge administration and management in Latvia L. Adamson and I. Jurka</p> <p>SIGPE – Development of a state bridge management system in Mexico F. A. Alonso, J. R. Casas and M. Nazar</p> <p>Uruguayan bridge management system S. García, A. Nieto, E. S. Larsen and J. S. Jensen</p> <p>Bridge management system in Osaka City M. Ishida, Y. Nagai, M. Hirano and T. Iritani</p> <p>AASHTO/FHWA international technology scan: bridge system preservation and maintenance I. M. Friedland and T. D. Everett</p>	<p>Special Session Cable-Stayed Bridges: Case Studies</p> <p>Chairs: A. H. Malik (Organizer) M. Dogaki</p> <p>New concepts for US cable-stayed bridges V. Chandra</p> <p>Modeling and analysis methodologies for cable-stayed bridges A. H. Malik</p> <p>Durability considerations in the design of the Seohae Grand Bridge M. C. Tang and D. Jang</p> <p>Long-term behaviors of a cable-stayed bridge based on full scale measurements J. C. Park, C. M. Park and S. P. Chang</p> <p>The determination of cable force of Chi-Lu cable-stayed bridge C. C. Chen, C. C. Chou, K. C. Chang, Z. K. Lee and W. H. Wu</p> <p>In-suit cable force test of Gi-Lu cable-stayed bridge K. C. Chang, Z. K. Lee, C. C. Chen and C. C. Chou</p>	<p>Repair and Strengthening (2)</p> <p>Chairs: T. Miyagawa K. K. Verma</p> <p>High strength concrete utilization on the rehabilitation of Rio-Niteroi Bridge's pavement: cut and embankment segments J. R. de Almeida, N. Velihovetchi and L. O. M. Cruz</p> <p>Improving service life of steel bridges, light poles and sign structures through the use of Ultrasonic Impact Treatment (UIT) K. K. Verma, E. S. Statnikov and L. Tehini</p> <p>Strengthening for RC flexural member deteriorated by corrosion of rebar using CFRP sheet T. Yamamoto, A. Hattori and T. Miyagawa</p> <p>Composite patch repair of fatigue-damaged steel bridge members T. D. Righiniotis, E. S. Aggelopoulos and M. K. Chryssanthopoulos</p> <p>Improving compressive strength for recycled aggregate concrete V. W. Y. Tam, X. F. Gao and C. M. Tam</p> <p>First application of second-generation steel-free deck slabs for bridge rehabilitation C. Klowak, R. Eden, A. Muftic, I. Elkholy, C. Tadros, B. Bakht and E. Loewen</p>	<p>Special Session Railway Bridge Rehabilitation</p> <p>Chairs: M. Sakano (Organizer) L. Gambarotta</p> <p>Rehabilitation of a fatigue damage railway truss bridge N. Horikawa, H. Namiki, S. Tokunaga, K. Ito, F. Yamada, K. Katsuura, K. Yasuda and Y. Haruyama</p> <p>Fatigue life assessment of a 75-year-old railway riveted box girder bridge M. Sakano, D. Nimura, Y. Osakada, M. Node, K. Sato and M. Ozawa</p> <p>Fatigue behaviour of early 1900's riveted railway girders M. Sakano, M. Miyano, H. Namiki and T. Sakata</p> <p>Fatigue performance of stringer-to-floor-beam connections in riveted railway bridges M. Al-Emrani, B. Åkesson and R. Kliger</p> <p>Assessment and rehabilitation of a nailed railway bridge A. Brencich and L. Gambarotta</p> <p>Fatigue behaviour of steel floor beams with welded lap joints in a composite slab railway truss bridge M. Sakano, K. Matsumoto, S. Yajima and K. Sakashita</p>	<p>Inspection and Prediction of Structural Performance (2)</p> <p>Chairs: M. Kawatani B. H. Oh</p> <p>A simplified preventive maintenance strategy for concrete bridges P. Thoft-Christensen</p> <p>Predicting the proportion of a concrete surface subject to corrosion-induced cracking and damage M. C. Stewart and K. A. T. Vu</p> <p>Calibration of safety factors for performance evaluation of deteriorating existing RC bridges Y. Yamanaka, Y. Yonezawa, H. Morikawa and T. Miyagawa</p> <p>Lifecycle assessment considering longevity of bridges S. Tsubouchi, Y. Itoh and I. T. Kim</p> <p>Inspection validation model for life-cycle analysis J. D. Bakker and J. M. van Noordwijk</p> <p>Prediction of structural deterioration from inspection ratings K. Kaito and M. Abe</p>	<p>Damage Assessment - Strength, Durability and Fatigue - (3)</p> <p>Chairs: J.-T. Kim M. Plos</p> <p>Classification of cracks in concrete slabs using pattern recognition methods Y. Kusunose, M. Hirokane and H. Furuta</p> <p>Modeling of the spatial variability for concrete structures V. Maloia and M. H. H. Faber</p> <p>Risk-alarming of structural damage in plate-girder bridges under uncertain temperature condition J.-T. Kim, J.-H. Park, Y.-H. Lee, B.-J. Lee and J.-S. Lee</p> <p>Structural damage assessment by nonlinear time-domain SI scheme S. Shin, S. H. Oh and J.Y. Jo</p> <p>Evaluation of fire damage on a prestressed concrete railway bridge E. Proverbio, G. Epasto and V. Venturi</p> <p>Structural assessment of a prestressed box girder concrete bridge, using non-linear finite element analysis M. Plos and K. Gylltoft</p>	<p>Design and Analysis (8)</p> <p>Chairs: H. Hikosaka M. Suzuki</p> <p>An effect of deicing salts on uncoated steel girder bridges of weathering steel S. Nara, E. Kawamura and K. Hayashi</p> <p>Steel pontoon corrosion prevention and maintenance plans for a floating bridge in Osaka T. Manuyama, T. Nishii, H. Tanaka, S. Takeda, Y. Matsuoka and M. Tsuchiya</p> <p>Quantifying the effects of concrete cover variations on service life estimates for reinforced concrete bridges P. D. Ronné</p> <p>Impact of main steel diameter on the flexural capacity of deteriorated reinforced concrete beams E. H. Hristova, F. O'Flaherty, P. S. Mangat and P. Lambert</p> <p>Corrosion prevention for small steel pieces to concrete S. Sakashita, T. Nakayama, K. Sugii and Y. Hamazaki</p> <p>Sensitivity analysis of chloride induced deterioration in concrete bridges M. I. Raitz, M. K. Chryssanthopoulos and T. Onoufriou</p>

Thursday Evening (ThE), October 21, 2004

15:30-16:00		Coffee Break				
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<p>Bridge Management Systems (3)</p> <p>Chairs: J. D. Bakker A. Miyamoto</p> <p>Taxonomy of bridge models in bridge management systems J. Biren K. Ohdo, S. Hanayasu and S. Charuvist</p> <p>Renovation of XVII century Ponte Lungo in Chioggia, Italy A. Mammmino, F. Tonon and L. Tonon</p> <p>Synchronized repair policy for bridge management M. Jido, T. Otaizawa and K. Kobayashi</p> <p>Probabilistic prediction of structural performance for rational bridge management system B. H. Oh and D. W. Kim</p> <p>Evaluation criteria for bridge maintenance C. Pellegrino, P. Franchetti, A. Soffiatio, C. Modena and D. Bruno</p> <p>Evaluation of candidate bridge management systems for use with Italian highway bridges E. Spallarossa</p> <p>Bridge management system GOA T. P. Mendonça and A. Vieira</p>	<p>Chairs: J. R. Casas T. Kitahara</p> <p>Study on the safety of demolition works of composite girder bridges K. Ohdo, S. Hanayasu and S. Charuvist</p>	<p>Chairs: M. Dogaki W. Shiraki</p> <p>Optimization of rehabilitation works J. Bjerrum and B. Lassen</p>	<p>Chairs: H. Iemura S.-H. Kim</p> <p>A study on seismic safety of the Hanshin Expressway existing arch bridge considering bearing failure T. Nishioka, T. Naganuma, H. Suzuki, J. Noguchi and K. Nishimori</p> <p>Performance of hysteretic steel damper for seismic retrofitting of a long-span truss bridge H. Kanaji, N. Hamada, T. Ishibashi, H. Inomo, T. Horiuchi, D. Cardenas and T. Sakugawa</p> <p>Bridge retrofit prioritization based on probabilistic seismic risk and failure cost analysis S.-W. Lee, S.-H. Kim and H.-S. Mha</p> <p>The seismic response of RC bridge column analyzed by using the Hilbert-Huang transform Y. F. Li, S. Y. Chang, W. C. Tzeng and K. Huang</p> <p>Non-linear seismic response of steel rigid-frame bridge pier considering live load M. Kawatani, Y. Nomura and M. Tsujii</p> <p>Current status of Japanese bridges and future perspectives (Oral Presentation) S. Nakatani, H. Teramoto, T. Tamakoshi, Y. Yoshida and S. Fukumaga</p>	<p>Chairs: P. Haardt Y. Kawakami</p> <p>Inspection and assessment of the Japanese historical timber bridge: Kintai Bridge T. Yoda</p> <p>Development of lifetime maintenance strategies for bridges of Japan Highway Public Corporation M. Matsumoto and D. M. Frangopol</p> <p>Life prediction of damaged structures of Hanshin Expressway Y. Kawakami and D. M. Frangopol</p> <p>Performance of uncoated weathering steel bridges against deicing salts in Gifu prefecture K. Hayashi, M. Sakaida, E. Furusawa, S. Nara and S. Murakami</p> <p>Inspection and cause of failure of beam-to-column connection in steel bridge piers on Hanshin Expressways K. Tokumasu, I. Nakamura, M. Sakano, S. Yoshihara and K. Horikawa</p> <p>Durability and service life prediction of FRP composites used in the rehabilitation of bridge infrastructure V. M. Karbhari, L. Lee, R. Walker and C. Sikorsky</p>	<p>Chairs: M. Sakano K. Yamada</p> <p>Structural integrity evaluation of highway riveted bridges A. A. Fernandes, P. T. de Castro, M. Figueiredo and F. Oliveira</p> <p>Long term performance of welded girders made of fatigue crack arresting steel M. Sakano, D. Nimura, K. Matsumoto, K. Arimochi, N. Konda, A. Isoda and S. Kondo</p> <p>Fatigue damage assessment of a welded joint from a composite bridge. Example of the Saint-Vallier bridge R. Lecomte, F. Coepter, J. Piccardi and C. Cremona</p> <p>Fatigue behavior of two-span steel fiber reinforced concrete beam I.-S. Seok, K.-H. Kwak, H.-S. Jung and H.-S. Jang</p> <p>Fatigue reliability assessment of bridge details based on maximum load specification T. D. Righiniotis</p> <p>Low cycle fatigue strength of welded joints in extreme large strain field K. Tateishi and T. Hanji</p>	<p>Chairs: H. Furuta H. Tanaka</p> <p>The present situation of bridge design process on the code of construction CALS/EC K. Yasuda, Y. Mikumo and Y. Ishi</p> <p>The basis of the future codes for bridge loads in Croatia A. Mandić and J. Radić</p> <p>A research for construction of 3D model house corresponding to web using 2D digital pictures E. Kitagawa, S. Tanaka, H. Furuta and T. Sugimachi</p> <p>A study of developing JHDM for the bridge structure T. Hongo and H. Ishimura</p> <p>Electric wave route for satellite simulation system H. Muraki, E. Kitagawa, S. Tanaka, H. Furuta and K. Nonaka</p>
<p>16:00-18:00</p> <p>ThE-A (Room A)</p>	<p>ThE-C1 (Room C1)</p>	<p>ThE-C2 (Room C2)</p>	<p>ThE-H (Room H)</p>	<p>ThE-I (Room I)</p>	<p>ThE-J (Room J)</p>	<p>ThE-K (Room K)</p>
<p>18:20-18:50</p> <p>Closing Ceremony (Room A)</p>						

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Aldayuz, J.L TuE-A	Biondi, B WE-I	Casas, J.R TuM-C1, TuA-J WM-K, ThA-A	Cluni, F WE-I	Di Domizio, M TuM-J	Félix, C TuM-C1
Al-Emrani, M ThA-H	Biondini, F TuM-J, WA-J WA-J, WA-J	Catallo, L TuM-J	Colombo, S WE-J	Diaz, M TuA-J	Fernandes, A.A ThE-J
Alonso, F.A ThA-A	Bjerrum, J TuM-I, TuA-I TuA-I, TuA-I ThE-C2	Catbas, F.N WE-H	Colotti, V TuM-J	Dicleli, M TuE-H	Fernandes, J.A TuM-C2
Al-Saidy, A.H WE-C2	Bontempi, F TuM-J, WA-J WA-J	Cavicchi, A TuE-C2	Como, M TuM-J	Dieleman, L TuA-C1	Ferreira, J TuM-C2
Alvandi, A TuA-C1	Bott, S.P ThM-H	Cerri, M.N WE-I	Conte, J.P WA-H	Ding, Y WA-C2	Ferreira, R.M TuE-J
Amako, M WM-C2	Branco, F.A TuM-C2, TuM-C2 TuA-C2, TuA-C2 TuA-C2, WA-J	Cha, C.-J ThM-K	Cormier, K WE-H	Dogaki, M TuE-K, ThE-C2	Figueiras, J TuM-C1
Andrade, C TuE-I	Brandes, K TuA-A	Chacon, A WE-C2	Corotis, R.B WM-H	Doornink, J.D WA-K	Figueiredo, M ThE-J
Ang, A.H-S WM-A (Keynote) WM-A	Breccolotti, M TuA-C2	Chai, Y.H WE-H	Correia, J.R TuM-C2	Dourthe, J.-M ThM-C1	Flamand, O TuA-H
Ansari, F TuE-C1	Brencich, A TuE-C2, ThA-H	Chajes, M WE-C2, ThM-C1	Coughlan, D ThM-K	Du, J WE-A	Foliente, G ThM-I
Arai, H TuE-K	Breyse, D WE-J	Chakraboorty, S ThM-H	Coutelier, P ThM-C1	Duchêne, Y WM-J	Forde, M.C WE-J
Arakawa, T TuA-C1	Bridges, G.E WA-C1	Chandra, V ThA-C1	Cremona, C TuA-C1, ThM-C1 ThE-J	Ducret, D TuA-C1	Förster, U WA-C1
Arimochi, K ThE-J		Chang, K.C TuM-K, TuA-J ThA-C1, ThA-C1	Croce, P WE-K	Dyke, S.J WA-H	Franchetti, P ThE-A
Arnbjerg-Nielsen, T ThM-K		Chang, S.P ThA-C1	Cruz, L.O.M ThA-C2		Frangopol, D.M TuM-A, TuA-A WA-J, WE-C1 ThM-A, ThM-J ThE-I, ThE-I
Ata, N WE-J				Eden, R ThA-C2	

Frappa, M **WE-J**
 Friedland, I.M **ThA-A**
 Frølund, T **TuE-C1**
 Fujii, H **TuM-A**
 Fujino, Y **TuM-H, WA-A**
WA-C1
 Fukawa, T **ThE-C2**
 Fukunaga, S **ThE-H**
 Fumoto, K **TuA-C1**
 Furukawa, T **ThM-C2**
 Furusawa, E **TuA-C1, ThM-C1**
WM-C1, ThE-I
 Furuta, H **TuM-A, TuM-A**
ThM-I, ThA-J
ThE-K, ThE-K

G

Gambarotta, L **TuE-C2, ThA-H**
 Gao, J.Q **WA-C2**
 Gao, X.F **ThA-C2**
 Garavaglia, E **WA-J, WA-J**
 García, S **ThA-A**
 Gardei, A **TuE-C1**
 Gentile, C **WE-I**
 Ghosn, M **TuA-J, WE-C1**
 Gil, H **WM-J**
 Gindy, M **ThM-C1**
 Giofrè, M **WE-I**
 Giordano, L **TuM-J**
 Glisic, B **WE-H**
 Goepfer, F **ThE-J**
 Gómez, R **WM-C1**
 Gottshall, W.L **ThE-C1**
 Greco, F **TuM-J**
 Grigorjeva, T **TuM-K**
 Grimaldi, A **TuM-J**
 Grimmelsman, K.A **WE-H, ThM-H**
 Grundy, J **TuE-C2**
 Grundy, P **TuE-C2, WA-K**
 Guan, H **WE-H**
 Gucunski, N **ThM-C1**
 Guedes Soares, C **TuE-I**

Gukov, I **ThM-K**
 Gusella, V **WE-I**
 Gylltoft, K **ThM-J, ThA-J**

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 Habel, K **TuE-K**
 Hai, D.T **ThE-C1**
 Hajdin, R **WA-A**
 Hallak, P **TuA-C1, ThM-C1**
 Halling, M.W **ThM-H**
 Hamada, N **ThE-H**
 Hamazaki, Y **ThA-K**
 Han, D.J **WE-A**
 Hanai, T **TuM-H**
 Hanayasu, S **WM-A, ThE-C1**
 Hanji, T **ThE-J**
 Hariri, K **WA-I**
 Hartnett, M **WM-K**
 Haruyama, Y **ThA-H**
 Hasegawa, T **ThE-C1**
 Hashimoto, K **WE-K**
 Hata, K **TuM-H**
 Hattori, A **ThA-C2**
 Haukaas, T **WM-A**
 Hayashi, K **WM-C1, ThA-K,**
ThE-I
 He, X **WA-H**
 Henke, V **TuM-C2**
 Henriques, A.A.R **WM-A**
 Herrero, V.V **TuM-C1**
 Higashiyama, H **WM-C2**
 Hindi, R **TuE-H**
 Hirai, J **TuA-H**
 Hiramoto, K **WA-C2**
 Hirano, M **ThA-A**
 Hirokane, M **TuE-H, WE-C2**
 Hirose, S **TuE-C1**
 Hirose, T **ThM-I**
 Hojo, M **ThM-C2**

Holst, A **WA-I**
 Hommel, D.L **TuM-I**
 Hongo, T **ThE-K**
 Honjo, Y **WM-I**
 Horii, K **TuE-J**
 Horikawa, K **WA-K, ThE-I**
 Horikawa, N **ThA-H**
 Horiuchi, T **ThE-C2**
 Hristova, E.H **ThA-K**
 Huang, K **ThE-H**
 Huston, D **ThM-H**
 Hwang, E.-S **WM-C2**
 Hyman, W.A **WA-A**

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Ichida, Y **WA-A**
 Idehara, Y **TuA-K**
 Iemura, H **TuE-H, TuE-H**
 Ikeda, K **WM-H**
 Imai, K **WE-C1**
 Imai, R **ThM-A**
 Imam, B **WE-K**
 Inamura, F **WA-I**
 Inaudi, D **WA-I, WE-H**
 Inchauspé, M.H **TuA-C1**
 Inomo, H **ThE-C2**
 Iritani, T **ThA-A, ThE-C2**
 Ishi, Y **ThE-K**
 Ishibashi, T **ThE-H**
 Ishida, M **ThA-A**
 Ishihara, Y **WA-C2**
 Ishimura, H **ThE-K**
 Isoda, A **WM-J, ThE-J**
 Issa, M.A **ThM-C1**
 Issa, M.A **ThM-C1**
 Itani, A **TuE-H, WE-C2**
 Ito, H **TuA-K**
 Ito, K **ThA-H**
 Ito, S **WM-C2**
 Itoh, Y **ThA-I**

Iwasaki, H **WE-K**
 Iwata, S **TuE-K**
 Izquierdo, D **TuE-I**
 Izumi, K **TuE-A**

J

Jacobsen, S.K **WM-C2**
 Jacobsz, S.W **ThM-K**
 Jalali, S **TuE-J**
 James, G **WM-C1, ThM-A**
 Jang, D **ThA-C1**
 Jang, H.-S **ThE-J**
 Jara, M **WM-K**
 Jensen, F.M **TuA-I, TuA-I**
 Jensen, J.S **TuA-I, ThA-A**
 Jeong, W **TuM-K**
 Jiang, Y **ThM-A**
 Jido, M **WE-A, ThE-A**
 Jo, J.Y **ThA-J**
 Johnsen, T.H **TuA-I**
 Johnson, M.B **WA-A**
 Johnson, N **WE-C2**
 Johnson, P.A **TuA-J**
 Jung, H.-S **ThE-J**
 Juozapaitis, A **TuM-K**
 Jurka, I **ThA-A**

K

Kadotani, T **TuA-H**
 Kaito, K **TuE-A, ThA-I**
 Kajita, Y **ThM-A**
 Kamaitis, Z.I **TuM-K**
 Kameda, T **TuM-A**
 Kanaji, H **TuA-K, ThE-H**
ThM-C2
 Kane, A.R **TuE-A**
 Kanemitsu, K **ThE-C2**
 Kaneuji, M **TuM-A**
 Kang, S **WM-J**
 Kanjo, N **WE-A**

Kano, M **WA-K**
 Karbhari, V.M **WE-H, ThE-I**
 Kaszynska, M **TuE-J**
 Kato, S **WM-H**
 Kato, Y **WM-I**
 Katou, H **WA-K**
 Katsuchi, H **ThE-C1**
 Katsuki, S **ThM-A**
 Katsuno, H **WE-K**
 Katsuura, H **TuA-C1**
 Katsuura, K **ThA-H**
 Kawaguchi, A **ThM-J**
 Kawaguchi, Y **WA-I**
 Kawakami, Y **WM-J, ThE-I**
 Kawamura, E **ThA-K**
 Kawamura, K **ThM-A**
 Kawamura, S **TuA-C2**
 Kawashima, Y **ThM-I**
 Kawatani, M **TuE-K, ThE-H**
 Kaynak, M **TuM-C1**
 Kim, C.W **TuE-K**
 Kim, D.W **TuE-C2, ThE-A**
 Kim, I.T **ThA-I**
 Kim, J **WM-C2**
 Kim, J.-T **ThA-J**
 Kim, N.S **TuM-K**
 Kim, S.H **TuA-C1, ThE-H**
 Kim, T.J **TuE-J**
 Kimoto, K **TuE-C1**
 Kindaichi, T **ThE-C2**
 Kishi, A **WE-K**
 Kitada, T **WA-C2, WE-K**
 Kitada, Ta **ThM-C2**
 Kitada, To **ThM-C2**
 Kitagawa, E **ThE-K, ThE-K**
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 Kitahara, M **WA-C2**
 Klaiber, F.W **TuM-C2, WA-K**
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 Klatter, H.E **TuE-A, WM-H**

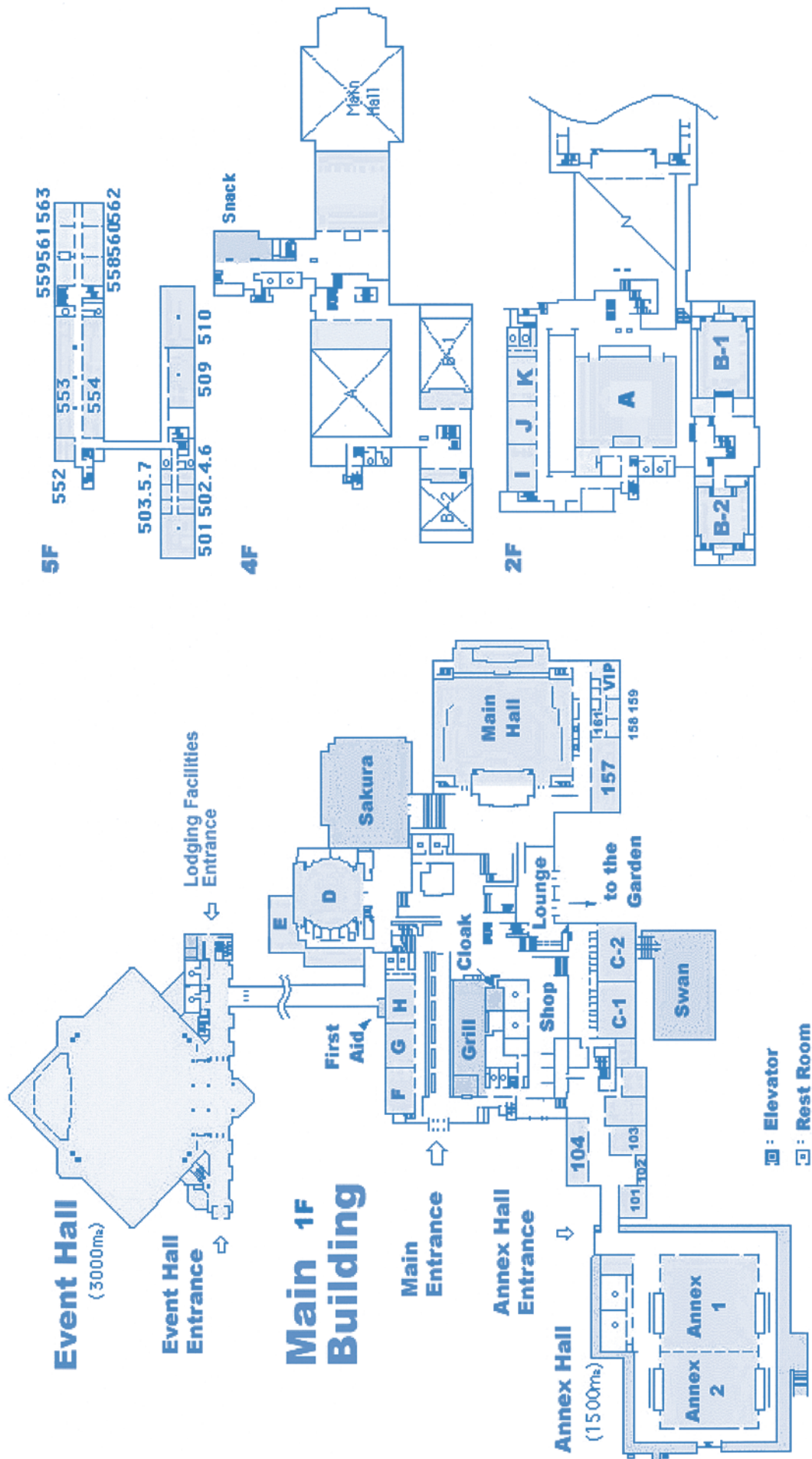
Kliger, R **ThA-H**
 Klowak, C **ThA-C2**
 Kobayashi, K **ThE-A**
 Kobayashi, T **WA-I**
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 Kogure, F **TuE-A**
 Koh, H.-M **WM-A (Keynote)**
 Kohl, Ch **TuE-C1**
 Konda, N **ThE-J**
 Konda, T.F **WA-K**
 Kondo, M **WE-K**
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 Krause, H.-J **ThM-I**
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 Kristensen, P.S **TuM-I**
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 Kubo, Y **TuM-H**
 Kuhlmann, U **WM-J**
 Kurita, A **TuA-K**
 Kurokawa, H **TuA-K**
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 Kwak, K.-H **WA-C1, ThE-J**

L

Ladkany, S **TuE-H, WE-C2**
 Lagace, S **ThM-J**
 Łagoda, M **TuM-C1**
 Lambert, P **ThA-K**
 Lanier, B **ThM-C2**
 Larsen, E.S **TuM-I, ThA-A**
 Lassen, B **ThE-C2**
 Lataste, J.-F **WE-J**
 Lauridsen, J **TuM-A (Keynote)**
TuM-I, TuA-I
 Lavigne, J **ThM-C1**
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Leconte, R ThE-J	Manabe, H WA-K	Mino, T ThE-H, ThM-C2	Nakayama ThA-K	Oka, S TuA-C1	Piccardi, J ThE-J
Lee, B.-J ThA-J	Mancini, G TuM-J	Mishima, Y ThE-C2	Namiki, H ThM-C2, ThA-H ThA-H	Okabayashi, T WM-K	Plos, M ThM-J, ThA-J
Lee, G.-H WM-K	Mandić, A ThE-K	Miyagawa, T ThA-C2, ThA-I	Nara, S WM-C1, ThA-K ThE-I	Okada, T TuE-A	Popa, V WE-C2
Lee, H WM-C2	Mangat, P.S ThA-K	Miyamoto, A TuA-A, WM-K WA-A, ThM-A	Nasser, S ThM-I	Okamura, H ThM-A (Keynote)	Postema, F.J WA-C1
Lee, J.J WM-C2	Manko, Z WA-K	Miyano, M ThA-H	Nassif, H.H TuE-J, TuE-J TuA-J, WE-C2 ThM-C1, ThM-C1	Okashiro, S TuA-K	Pradhan, A.A TuE-A
Lee, J.-S ThA-J	Maquoi, R WM-J	Miyauchi, H TuA-H	Nassar, M ThA-A	Okumatsu, T WM-K	Pradono, M.H TuE-H
Lee, K.-M ThM-K	Marchiondelli, A WA-J	Mizuno, Y WA-A	Neubauer, S.D TuM-C2	Okuno, S TuM-A, TuM-A	Prato, C.A TuM-I
Lee, K.W TuA-C1	Marecos, V TuA-C2	Moaveni, B WA-H	Neves, L.C TuA-A	Olaszek, P TuM-C1	Proverbio, E ThA-J
Lee, L ThE-I	Marshall, A.R WA-A, WE-A	Modena, C TuE-H, ThE-A	Ng, S ThM-H	Oliveira, F ThE-J	Q
Lee, S.-J WA-C1	Martins, F WA-J	Momota, K TuA-C2	Nieto, A ThA-A	Olofsson, I TuE-C2, TuE-C2	Qian, G ThM-J
Lee, S.-W ThE-H	Maruo, N ThE-C2	Monk, C WE-C2	Nigbor, R WA-H	Omenzetter, P ThM-H	Quinn, P ThM-C1
Lee, Y.-H ThA-J	Maruyama, T ThA-K	Moretti, O ThM-C1	Nihei, K WA-I	Onishi, H TuE-K	Quintela, H WM-J
Lee, Y.S WE-C2	Masri, S.F WA-H, WA-H WA-H	Mori, M TuA-C2	Nimura, D ThA-H, ThE-J	Onoufriou, T ThA-K	R
Lee, Z.K TuM-K, ThA-C1 ThA-C1	Masucci, N.J TuM-A	Morikawa, H ThM-I, ThA-I	Nishido, T WE-K	Ortega, L.M TuE-I	Radić, J WE-J, ThM-K ThE-K
Leung, C.K.Y WE-H	Materazzi, A.L TuA-C2	Moyo, P ThM-H	Nishii, T ThA-K, ThE-C2	Osakada, Y ThA-H	Radomski, W ThE-C2
Lewis, R TuE-J	Matos, J.C TuM-C1	Muñoz, D WM-C1	Nishimori, K ThE-H	Oshima, T WM-H	Rafiq, M.I ThA-K
Li, Y.F ThE-H	Matsui, S TuA-K, TuE-K WM-C2, WM-C2	Muragishi, O WA-I	Nishinohara, T TuA-C2	Otani, Y TuM-A	Raghavendrachar, M ThM-H
Liang, Y TuE-C1	Matsumoto, K ThA-H, ThE-J	Murai, R TuA-C1	Nishioka, T ThE-H	Otazaawa, T ThE-A	Ranasinghe, A.P ThE-C1
Lin, Y.-B TuA-J	Matsumoto, M ThE-I	Murakami, S WM-C1, ThE-I	Node, M ThA-H	Otsuka, K TuE-A	Recupero, A TuM-J, WE-I
Lin, Z TuA-H	Matsumoto, M WE-C1	Muraki, H ThE-K	Noguchi, J ThE-H	Owen, J.S TuM-H	Richardson, D WE-C2
Loewen, E ThA-C2	Matsumura, M WA-C2, ThM-C2	Muranaka, A WA-C2, WE-K	Nomura, Y ThE-H	Oyawa, W.O TuA-K	Richardson, M TuE-I
Loh, C.H TuM-K	Matsuno, H TuM-A	Muriã, D WM-C1	Nonaka, K ThE-K	Ozawa, M ThA-H	Righiniotis, T.D WE-K, ThA-C2 ThE-J
Lonetti, P TuM-J	Matsuo, K TuA-C2	Muruges, G WE-H, ThM-H	Nowak, A ThM-A (Keynote)	Ozerkan, T TuA-C1	Rinaldi, Z WA-J
Lopez, J.A TuE-J	Matsuoka, Y ThA-K	Muscolino, G WE-I	Nozaka, K ThM-C2	Ozkul, O WE-C2	Rizkalla, S ThM-C2
Lowe, M ThM-I	Mattsson, H ThM-A	Muto, K TuA-K	O	Pandey, M.D TuA-A	Robert, W.E TuE-A, WA-A WE-A
Lundgren, K ThM-J	McCarten, P.S WE-A	N	O'Connor, A.J TuM-I, TuA-I	Pardi, L TuE-I, WA-J	Rodrigues, J TuM-C2
Lus, H WA-H	Mendonça, T.P ThM-C2, ThE-A	Nagai, Y ThA-A	O'Dwyer, D WM-K	Park, C.M ThA-C1	Rodríguez, J TuE-I
M	Mertz, D ThM-C1	Naganuma, T TuA-K, ThE-H ThE-C1	O'Flaherty, F.J ThA-K	Park, H.S TuA-C1	Rohrmann, R.G WA-I
Maehata, H TuE-K	Mestrovic, D ThM-K	Nagasawa, M TuE-H	Ogawa, Y WM-C1	Park, J.C ThA-C1	Romack, G.P TuE-A
Maes, M.A ThM-K	Mha, H.-S ThE-H	Nair, A.U TuE-J	Oh, B.H TuE-C2, ThE-A	Park, J.-H ThA-J	Ronné, P.D ThA-K
Maher, A WE-C2	Mihara, T TuA-K	Nakagoshi, A ThM-C2	Oh, S.H ThA-J	Park, K.T TuA-C1	
Maierhofer, Ch TuE-C1	Mikami, S WM-H	Nakahata, K WA-C2	Ohata, K ThE-C1	Paulo, P ThM-C2	
Main, I.G WE-J	Miki, C TuM-A (Keynote)	Nakamura, I ThE-I	Ohdo, K ThE-C1	Paulotto, C WE-I	
Majka, M WM-K	Mikumo, Y TuE-K, ThM-A ThM-I, ThE-K	Nakamura, M TuM-K	Ohgaki, K WA-I	Paulsson, B TuM-I	
Malerba, P.G TuM-J, WA-J	Miller, J ThM-H	Nakatani, S ThE-H	Ohtsu, M WA-I, WE-J	Pellegrino, C TuE-H, ThE-A	
Malik, A.H ThA-C1	Miller, T WE-C2	Nakatani, T ThE-C1	Ojio, T TuE-C1	Penka, E ThM-J	
Malioka, V ThA-J	Min, X TuM-C2	Nakaya, S TuA-C1, TuA-H		Petcherdchoo, A TuA-A	
Mammino, A ThE-C1	Minata, O WA-C2, WE-K			Phares, B.M TuM-C2, WE-C2	

Sakaida, M WM-C1, WA-C2 ThE-I	Smyth, A.W WA-H	T Tadros, G ThA-C2	Tsujii, M ThE-H	Watanabe, H WM-C2	Ye, L ThM-I
Sakano, M WA-K, ThA-H ThA-H, ThA-H ThE-I, ThE-J	Sobanjo, J.O WE-A	Taggart, D.G TuE-J	Tsuru, K WE-J	Watanabe, T TuA-A	Yoda, T ThE-I
Sakashita, K ThA-H	Söderqvist, M.-K WE-A	Takada, Y ThM-C2, ThE-C1	Turer, A TuM-C1, TuA-C1	Weinblatt, H.B TuE-A	Yokoo, M TuE-J
Sakashita, S ThA-K	Soffiato, A ThE-A	Takahashi, A WM-C1	Tzeng, W.C ThE-H	Weissmann, J TuA-J	Yonekura, A TuA-K
Sakata, T ThA-H	Sofi, A WE-I	Takahashi, Y TuM-A, TuE-H	U Uchida, Y WM-C2	Wenczel, G WE-C2	Yonezawa, Y ThM-I, ThA-I
Sakate, M TuA-C1	Soma, T ThM-A	Takeda, K ThE-C2	Ueda, K ThM-I	Wenzel, H TuE-I	Yoshida, H TuE-J
Sakuda, T ThM-A	Sonoda, K WA-K	Takeda, S ThA-K	Uehira, S TuA-H, WA-K	Wichmann, H.-J WA-I	Yoshida, M WA-C2
Sakugawa, T ThE-H	Sonoda, Y ThM-A	Täljsten, B TuA-K, TuE-C2	Uesugi, T WM-I	Wiggenhauser, H TuE-C1	Yoshida, Y TuM-H, ThE-H
Sanchez, R WM-C1	Sørensen, R.E TuE-C1	Tam, C.M ThA-C2	Umeda, A WA-I	Wilson, A.F TuE-J	Yoshihara, S ThE-I
Sano, Y WE-J	Sousa, H TuM-C1	Tam, V.W.Y ThA-C2	Umsiedler, O.B TuA-I	Wipf, T.J TuM-C2, WA-K WE-C2	Yoshimura, T TuA-H
Santos, L.O TuM-C2, TuA-C2	Spallarossa, E ThE-A	Tamakoshi, T ThE-H	Umsiedler, O.B TuA-I	Wisniewski, D.F WM-A, WM-C1	Yuksel, S ThM-C1
Santos, M.F WM-J	Stadler, A ThA-A	Tamba, I WM-H	Umsiedler, O.B TuA-I	Womack, K.C ThM-H	Yun, C.-B TuM-A (Keynote)
Sarmad, A WE-C2	Stanciu, M WE-C2	Tanaka, C TuA-H	Umsiedler, O.B TuA-I	Wood, D.L TuM-C2	Yun, J.-H WM-K
Sato, H TuM-A	Statnikov, E.S ThA-C2	Tanaka, H WA-A, ThA-K	V Valente, C WA-J	Woods, E ThM-K	Z Zaitso, K TuA-K
Sato, K ThA-H	Stewart, M.G TuA-A, ThA-I	Tanaka, M WA-I	Valente, I WM-C1, WA-C2	Woodward, R.J TuE-I	Zanardo, G TuE-H, ThM-K
Sato, M WM-H	Stoltzner, E TuM-I, TuA-I	Tanaka, S ThE-K, ThE-K	van der Vusse, J.J TuE-A	Wu, W.H ThA-C1	Zandonini, R ThM-A (Keynote)
Sato, N WA-I	Strandgaard, H WE-H	Tang, M.C ThA-C1	van Noortwijk, J.M TuA-A, ThA-I WM-H	Yagi, K TuE-J	Zhang, Q TuA-H
Satoh, M ThE-C1	Strauss, A TuM-C1	Tanigaki, H WM-C2	Vanderzee, P.J TuE-A	Yajima, S ThA-H	Zhang, W WA-C2
Schmid, W WA-I	Streicher, D TuE-C1, ThM-I	Tarighat, A ThM-J	Velihovetchi, N ThA-C2	Yamada, F ThA-H	Zhu, H WA-C2
Schnerch, D ThM-C2	Sugii, K ThA-K	Tateishi, K ThE-J	Venturi, V ThA-J	Yamada, H ThE-C1	Zilch, K ThM-J
Seok, I.-S ThE-J	Sugimachi, T ThE-K	Tehini, L ThA-C2	Vera, R WM-C1	Yamada, I TuM-K	Žnidarič, A TuE-I
Sgambi, L TuM-J, WA-J	Sugimoto, H TuA-A	Terada, M ThE-C2	Verma, K.K ThA-C2	Yamada, K TuE-C1	Zoli, T ThM-C1
Shao, X.D WM-K	Sugimoto, T TuM-K, WE-J	Teramoto, H ThE-H	Vestroni, F WE-I	Yamada, M WA-C2	Zuritz, C WE-H
Sheng, L.-H WA-H, WE-H	Sugita, S WA-I	Thoft-Christensen, P ThA-I, WM-H	Vidoli, S WE-I	Yamagami, T TuA-C1, WM-J	
Shepard, R.W WA-A, ThM-H	Sugiura, K TuA-K, WE-K	Thompson, P.D WM-A (Keynote) WA-A, WE-A	Vieira, A ThE-A	Yamaguchi, E ThA-C2	
Shetty, N TuE-I	Suksawang, N TuE-J, WE-C2	Thomson, D.J WA-C1	Virlogeux, M TuA-H	Yamaguchi, T WE-K	
Shi, B WA-C2	Sumi, K TuM-K	Tiwari, D.N WE-C1	Volk, J ThM-C1	Yamamoto, T ThA-C2	
Shigeishi, M WE-J, WE-J	Sumitro, S WM-I, WM-I WM-I, WM-I	Tokumasu, K ThE-I	Vrouwenvelder, A.C.W.M WM-H	Yamanaka, Y ThA-I	
Shimano, K WM-I	Sun, L TuA-H, WA-C1	Tokunaga, S ThA-H	Vu, K.A.T ThA-I	Yamauchi, K ThE-C2	
Shimizu, H WM-J	Sundquist, H WM-C1, ThM-A	Tominaga, M WM-I	W Wahbeh, M WA-H	Yamazaki, A TuM-A, TuM-A	
Shimura, A TuE-H, WE-K	Sureshkumar, K TuE-H	Tomoda, Y WA-I	Wakatsuki, K WA-K, WA-K	Yan, B.F WM-K	
Shin, S ThA-J	Suzukawa, K ThM-C2	Tonon, F ThE-C1	Walker, R ThE-I	Yan, Q.S WE-A	
Shiraki, W TuE-K, ThE-C2	Suzuki, H TuA-K, ThE-H	Tonon, L ThE-C1	Wang, J TuA-J, WE-C1	Yanagisawa, E TuA-C1	
Shirakura, A ThM-I	Suzuki, M WM-I, WA-C2	Toyoda-Makino, M WA-A	Wang, M.L WM-I	Yasuda, F TuE-H	
Sikorsky, C WE-H, ThE-I	Suzuki, N ThE-H, ThM-C2	Tsai, I.-C TuA-J	Wardlaw, R.L TuM-H	Yasuda, K TuE-K, ThM-A ThM-I, ThA-H ThE-C2, ThE-K	
Sirieix, C WE-J	Suzuki, T WM-C2, WA-K WA-K, WE-K	Tsiatas, G TuE-J	Watanabe, E TuA-K, WA-K ThE-C1	Yasumori, H WM-I	
Sloth, M TuM-I, TuM-I TuM-I, TuA-I TuA-I, TuA-I	Suzuki, Y WE-K	Tsubouchi, S ThA-I			
	Swinehart, M WE-C2	Tsuchiya, M ThA-K			



Floor Plan of Kyoto International Conference Hall (KIC)

Monday, Oct. 18th	16:00-20:00	Registration (Main Entrance)
	18:00-20:00	Welcome Reception (Banquet Hall Swan)

Tuesday, Oct. 19th	8:20- 9:00	Opening Ceremony (Room A) (Registration desk opens at 7:50)						
	9:00-10:30	Keynote Lectures (Room A)						
	11:00-13:00	TuM-A (Special Session) Asset Management of Infrastructures	TuM-C1 Measurement and Monitoring (1)	TuM-C2 (Special Session) Bridge Testing and Assessment (1)	TuM-H (Special Session) Structural Retrofit to Wind-induced Vibration (1)	TuM-I (Special Session) Experience with Probability-based Assessment of Bridges	TuM-J (Special Session) Identification, Modelling, Analysis and Control of Uncertainties in Design of Large Span Bridges	TuM-K Design and Analysis (1)
	14:00-15:40	TuA-A (Special Session) Life Cycle Maintenance Models	TuA-C1 Measurement and Monitoring (2)	TuA-C2 (Special Session) Bridge Testing and Assessment (2)	TuA-H (Special Session) Structural Retrofit to Wind-induced Vibration (2)	TuA-I (Special Session) Implemented Probability-based Maintenance Management of Bridges in Denmark	TuA-J (Special Session) Bridge Scour	TuA-K Design and Analysis (2)
16:10-18:30	TuE-A (Special Session) Total Asset Management	TuE-C1 Measurement and Monitoring (3)	TuE-C2 Loads and Testing (1)	TuE-H Seismic Analysis and Retrofitting (1)	TuE-I (Special Session) The European Funded Research Programme: Toward Knowledge Integration	TuE-J (Special Session) High-Performance Materials for Bridges	TuE-K Design and Analysis (3)	

Wednesday, Oct. 20th	8:30-10:00	Keynote Lectures (Room A) (Registration desk opens at 8:10)						
	10:30-12:10	WM-A Reliability and Risk Management	WM-C1 Measurement and Monitoring (4)	WM-C2 Loads and Testing (2)	WM-H (Special Session) Political and Other Societal Issues of Life-Cycle Costing	WM-I (Special Session) Monitoring-Based Maintenance for Bridge Management and Safety (1)	WM-J (Special Session) Safety of Box Girder Bridges	WM-K Design and Analysis (4)
	13:30-15:30	WA-A (Special Session) New Trends in Bridge Management	WA-C1 Measurement and Monitoring (5)	WA-C2 Loads and Testing (3)	WA-H (Special Session) Structural Health Monitoring of Bridges - sponsored by IASC	WA-I (Special Session) Monitoring-Based Maintenance for Bridge Management and Safety (2)	WA-J (Special Session) Emerging Strategies for Durability Analysis and Service Life Assessment of Bridges	WA-K Design and Analysis (5)
	16:00-18:00	WE-A (Special Session) Bridge Management Systems in Operation	WE-C1 (Special Session) Safety of Bridges Subjected to Extreme Loading Events	WE-C2 (Special Session) Strengthening of Existing Bridges	WE-H (Special Session) Bridge Health Monitoring (1)	WE-I (Special Session) Bridge Assessment: Some Italian Studies	WE-J Damage Assessment - Strength, Durability and Fatigue - (1)	WE-K Design and Analysis (6)
	18:15-18:45	General Assembly (Room A)						
19:30-22:30	Banquet (Banquet Hall Sakura)							

Thursday, Oct. 21st	8:30-10:00	Keynote Lectures (Room A) (Registration desk opens at 8:10)						
	10:30-12:10	ThM-A Bridge Management Systems (1)	ThM-C1 (Special Session) Dynamics and Field Testing of Bridges	ThM-C2 Repair and Strengthening (1)	ThM-H (Special Session) Bridge Health Monitoring (2)	ThM-I Inspection and Prediction of Structural Performance (1)	ThM-J Damage Assessment - Strength, Durability and Fatigue - (2)	ThM-K Design and Analysis (7)
	13:30-15:30	ThA-A Bridge Management Systems (2)	ThA-C1 (Special Session) Cable-Stayed Bridges: Case Studies	ThA-C2 Repair and Strengthening (2)	ThA-H (Special Session) Railway Bridge Rehabilitation	ThA-I Inspection and Prediction of Structural Performance (2)	ThA-J Damage Assessment - Strength, Durability and Fatigue - (3)	ThA-K Design and Analysis (8)
	16:00-18:00	ThE-A Bridge Management Systems (3)	ThE-C1 Case Studies	ThE-C2 Repair and Strengthening (3)	ThE-H Seismic Analysis and Retrofitting (2)	ThE-I Inspection and Prediction of Structural Performance (3)	ThE-J Damage Assessment - Strength, Durability and Fatigue - (4)	ThE-K Design and Analysis (9)
	18:20-18:50	Closing Ceremony (Room A)						