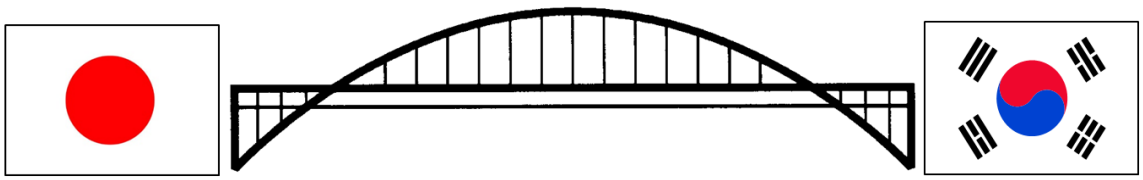
The 12th Japan – Korea Joint Symposium on

Steel Bridges

University of the Ryukyus, Okinawa, Japan, 22 – 24 August, 2013

Program



JSSB-JK12

Organized by University of the Ryukyus

TECHNICAL PROGRAM

22, August

Senbaru Campus, University of the Ryukyus

Time Table of Symposium

Start	End	**Robby (1F, Faculty of Engineering Building-1)**	
10:00	10:30	Registration	
		Room A (Room 221)	
10:30	10:45	**Opening Address** Prof. Takeshi MORI (Housei University) Prof. Young-Suk PARK (Myongji University)	
10:45	11:45	**Keynote Lecture 1** ***How dose the Future Look for Steel Bridges?*** Prof. Tetsuya Yabuki (University of the Ryukyus)	
11:45	13:15	Lunch (University COOP)	
		Room A (Room 221)	**Room B (Room 222)**
13:15	15:15	Session 1 **Corrosion and Ultimate Strength**	Session 2 **Fatigue and Fracture (I)**
15:15	15:30	Coffee Break	
15:30	17:30	Session 3 **Monitoring and Maintenance (I)**	Session 4 **Fatigue and Fracture (II)**

RECEPTION

Start	End	
18:00	20:00	University COOP North Cafeteria

TECHNICAL PROGRAM

23, August

Senbaru Campus, University of the Ryukyus

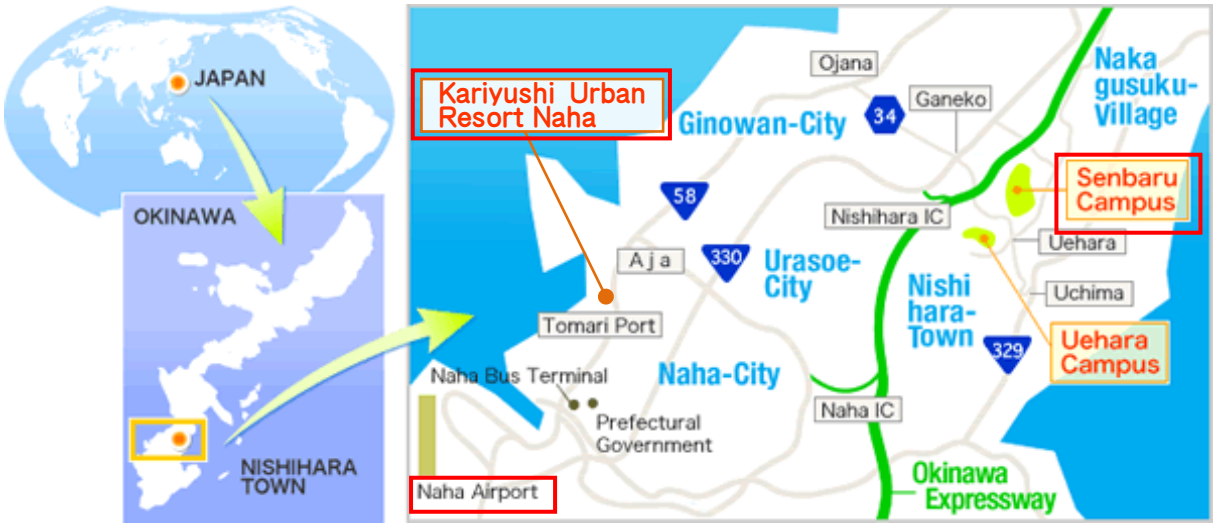
Time Table of Symposium

Start	End	**Robby (1F, Faculty of Engineering Building-1)**	
10:00	10:30	Registration	
		Room A (Room 221)	
10:30	11:30	**Keynote Lecture 2** ***Development of High Performance Cable System and Steel for Super Long Span Bridges in Korea*** Ph.D. Taek-Ryong SEONG (RIST)	
11:30	13:00	Lunch (University COOP)	
		Room A (Room 221)	**Room B (Room 222)**
13:00	14:30	Session 5 **Monitoring and Maintenance (II)**	Session 6 **High Strength Bolts and Steel Plate**
14:30	14:45	Coffee Break	
14:45	16:30	Session 7 **Buckling and Ultimate Strength**	Session 8 **Project and Design**
		Room A (Room 221)	
16:30	16:45	Closing Address	

BANQUET

Start	End	
19:00	21:00	Okinawa Kariyushi Urban Resort Naha

[University of the Ryukyus, Senbaru Campus Access Map]



Presentation Schedule
Titles and Authors

22, August (Tuesday)

Time	Room A
13:15 ∫ 15:15	**Session 1 : Corrosion and Ultimate Strength** *Chairman: Eiichi SASAKI* **1. Corrosion State of Lower Gusset Plate Connection on Steel Truss Bridge and the Loading Test Result** *Masakazu KURIHARA, Kuniei NOGAMI, Shohei TAKAHASHI, Nguyen Xuan TUNG, Teruhiko YODA, Hideyuki KASANO, Jun MURAKOSHI and Mamoru SAWADA* **2. Ultimate Behavior of Steel Truss Bridge Gusset Plates Subjected to Compressive Force** *Hideyuki KASANO, Teruhiko YODA, Kuniei NOGAMI, Jun MURAKOSHI, Mamoru SAWADA, Weiwei LIN, Heang LAM and Haijie GE* **3. Evaluation for Crevice Corrosion State of Gusset Plate Connection on Steel Truss Bridge** *Nguyen Xuan TUNG, Kuniei NOGAMI, Teruhiko YODA, Hideyuki KASANO, Jun MURAKOSHI and Mamoru SAWADA* **4. An Analytical Investigation on Collapse Mechanism of Steel Girder Bridge due to Severe Corrosion Damage** *Masayuki TAI, Tetsuhiro SHIMOZATO, Yasunori ARIZUMI and Tetsuya YABUKI* **5. Eddy Current Corrosion Inspection of Steel Bridge Members by Multi-Coil Probe** *Minesawa George VULPE, Eiichi SASAKI and Chitoshi MIKI* **6. Anticorrosion Engineering for Steel Bridges with Cold Spray Coating System** *Susumu INOKUCHI, Shogo KIYOKAWA, Masaaki KIMURA and Tetsuhiro SHIMOZATO*
	Room B
	Session 2 : Fatigue and Fracture (I) *Chairmen: In-Tae KIM & Shozo NAKAMURA* **1. Near-White Metal Blast Cleaning to Increase Fatigue Resistance of Welded Joints** *In-Tae KIM, Jin-Hwan CHEUNG and Sung-Do KIM* **2. Residual Stress Distribution in Welded Joints by Applying Low-Temperature Transformation Welding Material** *Naohiro SOUDA, Kazuo TATEISHI and Takeshi HANJI* **3. Fatigue Strength Evaluation of Out-of-Plane Gusset Weld Joint** *Kengo ANAMI, Yusuke GODA, Daisuke UCHIDA, Takeshi HANJI and Shigeyuki HIRAYAMA* **4. Effect of material mismatch and plate assembling systems on low cycle fatigue strength of beam-to-column connections** *Kawin SAIPRASERTKIT, Eiichi SASAKI and Chitoshi MIKI* **5. Crack Detection by Temperature Change during Low Cycle Fatigue of Compact Tension Specimen** *Kazuki KANAMORI, Eiichi SASAKI and Kawin SAIPRASERTKIT* **6. A Study on Improvement of Fatigue Durability of Bearings in Steel I Girder Bridges** *Mina TAKESHITA, Takeshi MORI and Daisuke UCHIDA* **7. Effect of High Strain Rate during Earthquake on Low-Cycle Fatigue Behavior of Steel Members** *Sinsamutpadung NATDANAI, Eiichi SASAKI and Kawin SAIPRASERTKIT* **8. A Numerical Approach for Fatigue Crack Propagation on Steel Member** *Kyong-Ho CHANG, Chin-Hyung LEE and Vuong-NV-DO*

Time	Room A
	Session 3 : Monitoring and Maintenance (I) *Chairmen: Takeshi MIYASHITA & Kab-Soo KYUNG* **1. A Wireless SHM System Solutions for A Long Span Interisland Bridge in Okinawa** *Eiichi SASAKI, Minesawa George VULPE, Tetsuhiro SHIMOZATO, Yasunori ARIZUMI and Satoshi NAKAMINE* **2. Evaluation of Vehicle Characteristics by Application of BWIM Methodology** *Donggyun YOO, Kab Soo KYUNG, Hee Hyun LEE and Jun Chang JEON* **3. An Anomalies Detection Method Based on Nonlinearity Expression for SHM Systems** *Eiichi SASAKI, Nguyen Khac THANH, Navickas ROKAS and Minesawa George VULPE* **4. Non-Destructive Inspections for a Steel Plate Bonding Method** *Hajime TACHIBANA, Keisuke NAKAMOTO, Yoshinori SHIMADA, Oleg KOTYAEV, Yuuya YAMAGUCHI and Sohichi HIROSE* **5. Visualized Magnetic Flux Based Steel Cable NDE System for Long Span Bridges** *Ju Won KIM, Jun Seok OH, Jong Jae LEE and Seunghee PARK* **6. Reliability Analysis for Large-Scale Structures by Using Metaheulistic** *Masato USUI, Hitoshi FURUTA and Ken ISHIBASHI*
	Room B
15:30 ∫ 17:30	**Session 4 : Fatigue and Fracture (II)** *Chairmen: Kyong-Ho CHANG & Kengo ANAMI* **1. Fatigue Durability Evaluation of Bead Penetrating Crack Repair Weld between Trough Rib and Deck Plate** *Masahiro SAKANO, Naoto NISHIDA, Akiko TABATA, Hiroki SUGIYAMA and Yoshio TAMBA* **2. Fatigue Test of Welded Joints Used in Modular Expansion Joints** *Kentaro YAMADA, Kazuki FUSEYA and Satoshi YAMADA* **3. A Study on Weld Repair of Steel Members under Cyclic Loading** *Yoshio HASEGAWA, Takeshi HANJI, Kazuo TATEISHI and Sung-Min CHOI* **4. Development of Optimal Shape of Bulkhead Plates in Orthotropic Steel Deck-Plate** *Jeong-hak LEE, Doo-byong BAE and Chang-kook OH* **5. Evaluation of Fatigue Damage of Diagonal Members in Ikitsuki Bridge** *Shota TANAKA, Shozo NAKAMURA, Toshihiro OKUMATSU, Takafumi NISHIKAWA and Tojiro HASHIMOTO* **6. Experimental Study on Fatigue Durability of Orthotropic Steel Bridge Decks with U-shape Longitudinal Ribs** *Akiko TABATA, Atsunori KAWABATA, Shiro SAITO, Shuichi ONO, and Masanori MATSUMOTO* **7. Stress Relieving Effects near the Intersection of U-Rib and Floor Beam in Orthotropic Steel Deck according to the Application of Stress Relief Holes** *Kyoung Sup JUNG, Kyoung Nam KIM and Keon Bong YANG* **8. Fatigue Behavior of Bulb Rib Orthotropic Steel Deck with the Slit of R40** *Takashi KUSUMOTO, Masahiro SAKANO, Akiko TABATA and Hiroki SUGIYAMA*

23, August (Friday)

Time	Room A
	Session 5: Monitoring and Maintenance (II) *Chairmen: Takeshi HANJI & Cheol-Woo PARK* **1. FRP Usage for Maintenance Performances of Steel Girder Bridges** *Shuhei YAMASHITA, Yasunori ARIZUMI, Tetsuhiro SHIMOZATO and Tetsuya YABUKI* **2. Slab Replacement at Igei Viaduct in the Okinawa Expressway** *Kenji MIYAMOTO, Taichirou NAGI, Hideo WAKISAKA, Takahisa IWABUCHI and Meguru TSUNOMOTO* **3. Feasibility Study of Fast Accelerated Set Concrete Application on Deteriorated Reinforced Concrete Decks** *Yuichi ISHIKAWA, Doyeon KWAK and Mamoru MORIYAMA* **4. Accelerated Replacing Method of Aged Existing Open-Steel-Plate-Girder Railway Bridges** *Yoon EO, Eunsoo CHOI, Jaewon LEE, Chunsung JUNG and Ghi ho TAE* **5. Development of Anchorage for 2400MPa Steel Strand for Prestressed Concrete** *Jin-Kook KIM, Taek-Ryong SEONG and Myung-Hyun NOH* **6. Repair Method for Corroded Steel Girder Ends Using Carbon Fiber Sheet** *Takeshi MIYASHITA, Dai WAKABAYASHI, Yuya HIDEKUMA, Akira KOBAYASHI, Yusuke OKUYAMA, Norio KOIDE, Wataru HORIMOTO and Masatsugu NAGAI*
13:00 ∫ 14:30	Room B
	Session 6 : High Strength Bolts and Steel Plate *Chairmen: Taek-Ryong SEONG & Hideyuki KASANO* **1. An Experimental Study on Slip Resistance of High Strength Bolted Connections with Pre-Slide Contact Surface** *Mitsuru ICHIMIYA, Takeshi MORI, Kosuke TASAKA and Daichi FUJINO* **2. Fundamental Study on Improvement of Bolt Shape for Developing 1,800 MPa Class Ultra-high Strength Bolt** *Chao PAN, Takashi YAMAGUTI and Yuuji KIMURA* **3. FEA Study on the Slip Coefficient of High Strength Bolted Friction Type Joint with Thick Plates Considering Structural Dimensions** *Xue PENG, Takashi YAMAGUCHI and Toshikazu TAKAI* **4. Weldability of Welded Joints Made of Higher Yield Strength Steel Plates for Bridges** *Taichi KAJITA and Koji KINOSHITA* **5. Experimental Investigation on Fatigue Strength of Under-Matched Welded Joints Made of 800MPa Class Steels** *Koji KINOSHITA and Daichi MIZUE* **6. Applying Specially Rolled Tapered Steel Plates to Short-Span I-Girder Bridge** *Kenta WADA, Masahiro SAKANO, Kuniaki TERAWAKI and Yoshikazu TANABE*

Time	Room A
14:45 ∫ 16:30	**Session 7 : Buckling and Ultimate Strength** *Chairman: Koji KINOSHITA* **1. Elasto-Plastic Behavior and Ultimate Strength of 4 Long-Span Suspension Bridge** *Kensuke FUJIOKA, Kuniei NOGAMI, Torahiko IKEDA and Masatsugu NAGAI* **2. Analytical Investigation on Local Buckling Phenomenon of a Steel Pipe Bridge Pier Subjected to Vertical Earthquake Motion with Large Acceleration** *Masami MORI, Shota OKAMOTO and Nobutoshi MASUDA* **3. Evaluation of End Bearing Resistance of the Y-Type Perfobond Rib Shear Connector according to the Parameters of Rib Width and Rib Height** *Sang-Hyo KIM, Won-Ho HEO, Chi-Young JUNG and Kyung-Sik WOO* **4. Numerical Analysis of a Beam-to-Column Connection Model of a Steel Bridge Frame Piers with Circular Column** *Tatsuya SUZUKI and Koji KINOSHITA* **5. Wind Condition Concerning Vibration of Members of a Steel Truss Bridge** *Junki MOHRI, Takafumi NISHIKAWA, Shozo NAKAMURA, Toshihiro OKUMATU and Kohei YAMAGUCHI* **6. Large Scale Structural Improvement of Existed Simple Steel Bridges by Connecting Girders and Slabs** *Hajime HIDA, Yukio ADACHI, Kazuki AMO, Seiji KAWAMURA and Hiroyuki UEDA* **7. Fire Resistance Analysis of Bridges with Various Fire Standard Curves** *Cheolwoo PARK, Min-Kwan JU and Seung-Yong LEE*
	Room B
	Session 8 : Project and Design *Chairmen: Eun-Soo CHOI & Tetsuhiro SHIMOZATO* **1. Reduction of Life Cycle Cost by Metal Spray Technique and Structural Details** *Katsuaki YOGI and Norimitsu TAKARA* **2. Reduction of Life Cycle Cost Using a Metal Spray Technique on Irabu Bridge in Japan** *T. SHIMOZATO, Y. ARIZUMI, M. TAI, S.NAKAMINE, T.ONAGA, Y. NAGASAKA, A. YAKABE and F. TAKASHI* **3. Long-Distance Ocean Shipping of Steel Box Girders for Irabu Bridge in Japan** *A. YAKABE, Y. NAGASAKA, F. TAKASHI, T. SHIMOZATO, Y. ARIZUMI, M. TAI, S.NAKAMINE and T.ONAGA* **4. Design and Construction of Highway Viaduct Supported by New Steel Pipe Integrated Pier with Shear Link** *Takashi KOSAKA, Hidesada KANAJI and Masatsugu SHINOHARA* **5. A Study on the Differences between Design Standards of Wind and Earthquake Loads for theDesign of Plant Structural Members** *Jong-Han LEE, Eunsoo CHOI and Baik-Soon CHO* **6. Formulation of Impact Coefficient for Fatigue Design of Steel Highway Bridges Based on Dynamic Response Analysis to a Moving Vehicle** *Shozo NAKAMURA, Kazuya NAKANO, Takafumi NISHIKAWA, Toshihiro OKUMATSU and Yoshitaka MITSUI*