FINAL PROGRAM

01-03/JULY/2015

EXPERTS, EXPERIENCES AND STATE OF ART ACHIEVEMENTS

Alfândega - Porto-Portugal

CO-SPONSORS
WeLcOMe tO the MULtI- sPAN LARGe BRIDGes 2015!

It is our great pleasure to welcome you to the 1st International Conference on Multi-Span Large Bridges. The Conference is organized by FEUP (Faculty of Engineering of Porto University) in cooperation with IST of Lisbon (Lisbon Institute of Technology), with the University of Minho and with LNEC (National Laboratory for Civil Engineering).

The aim of this Conference is to aggregate experts and experiences in a global meeting where the outputs – interaction and documents – are to promote a contribution for an increase in the performance and knowledge of all participants.

There is also the purpose of sharing state of art achievements not necessarily with origin in this specific field of Bridge Engineering, but clearly with potential application in multi-span large bridges.

Ten, worldwide, prestigious Bridge Engineers, from different regions of the world, were invited to share their experiences. Nearly 150 contributions from Designers, Constructors, Members of Academia and Researchers were selected within an intensive work of the conference’s Scientific Committee, who reviewed papers of more than 400 authors. These contributions were organized in 13 thematic sessions.

We also Welcome you to Porto! Porto is one of the charismatic and fascinating cities in Europe. Porto is a welcoming and conservative environment and it is also a contemporary and creative city. We are pleased to be able to share with you experiences, traditions, flavors and places that we are sure that will be unique and will make you want to return.

The Venue will be held in Alfândega Nova do Porto Congress Centre, a place that we chose due not only to its historical value, but also due to its privileged location and quality of service and infrastructures. Alfândega Nova do Porto has been considered the Best Congress Centre in Portugal for the past four years and in 2014 has been awarded “Best Meetings and Conference Centre in Europe” by Business Destinations Magazine.

We hope that your visit to Porto will be enjoyable, memorable and intellectually stimulating.

WELCOME TO PORTO! WELCOME TO THE MULTI- SPAN LARGE BRIDGES 2015!
VENUE
Centro de Congressos da Alfândega do Porto
Rua Nova da Alfândega
Edifício da Alfândega
4050-430 Porto

DINNER OF THE CONFERENCE
Palácio da Bolsa
R. Ferreira Borges
4050-253 Porto

WHAT TO VISIT NEAR THE VENUE

BRIDGES
1. Arrábida Bridge
2. Luís I Bridge
3. Pillars of Pênsil Bridge (1843-1887)
4. Infante D. Henrique Bridge
5. Maria Pia Bridge
6. São João Bridge
7. Freixo Bridge

CHURCHES
1. São Francisco Church
2. Santa Clara Church
3. Clérigos Tower & Church
4. Nossa Senhora do Carmo das Carmelitas Church
5. Cathedral of Porto

HISTORIC BUILDINGS
1. Palácio da Bolsa
2. Town Hall of Porto
3. Lello & Irmão Bookstore
4. Bolhão Market
5. São Bento Station

MUSEUMS
1. Transport and Communication Museum
2. Wine of Porto Museum
3. Infante House
4. Portuguese Photography Centre
5. Soares dos Reis National Museum - Carrancas Palace

SEIGHTSEEING
1. Passeio das Virtudes
2. Ribeira Square
3. Flores Street
4. Cedofeita Street
5. Palácio de Cristal Gardens

MAPA CEDIDO PELO DEPARTAMENTO DE TURISMO/CÂMARA MUNICIPAL DO PORTO
REGISTRATION

All attendees of the conference are requested to check in at the registration desk of the conference secretariat.

Normal registration fee includes
- Conference Attendance
- Conference Documents Package
- Non-Social Meals
- Boat Trip & Port Of Honor
- Dinner of the Conference
- Entrance to Transport and Communication Museum (Located in Alfândega Nova do Porto Building)

MSLB HOTLINE
From 29 June 9 AM to 03 July 11 PM
for any assistance please call: +351 924 447 920

CONFERENCE SECRETARIAT
Conference Secretariat will be located on 2º floor, at the entrance of the Venue

Opening hours
- 30 June: 17.30 – 19.30
- 01 July: 08.00 – 13.00; 14.00 – 18.30
- 02 July: 09.00 – 13.00; 14.00 – 18.30
- 03 July: 09.00 – 13.00; 14.00 – 16.30

ORAL PRESENTATIONS
- All presentations are oral and in English.
- Please check the final program close to the Conference date to confirm the time and room of your presentation.
- The time allocated for each presentation is 12 minutes. In order to keep the conference on schedule and to accommodate participants who want to move between sessions, session chairs are urged to strictly follow the time schedule. Please be considerate of your fellow speakers and stay within your allocated time.
• All lecture rooms are equipped with a computer.
• Presentation files may be in .pdf or .ppt(x) format. Note that it is not allowed to use own notebook computers for the presentation to keep the time between presentations minimal.
• All computers are equipped with Windows and the following software: Adobe Reader X, Microsoft Office 2013, Windows Media player (supporting divx, mpeg, flash) and VLC player
• Authors whose presentation contains animations, videos, or special effects are strongly encouraged to test it before their session in the respective room. It is the authors responsibility to check in advance that their presentation works with the installed version of the available software.

ADDITIONAL USEFUL INFORMATION

Electricity
The electric power is 220V.

Opening hours banks and stores
Banks are generally open from 9.00 to 15.30, supermarkets from 8.30 to 18.30, while most other shops open their doors from 10.00 to 18.00. Most shops remain open at lunchtime, although you may find a few closed between 12.30 and 14.30. Currency exchange after banking hours is possible at the airport.

Credit cards
Shops and restaurants usually accept major international credit cards such as EuroCard-MasterCard, Visa, American Express, and Diners Club, with a preference for EuroCard-MasterCard and Visa.

Taxi service
Several taxi services are available in Porto:
RADIOTAXI
00351 225073900
00351 969661666
00351 917555085
00351 935073900
TAXIS INVICTA
00351 22 507 6400
00351 912 301 251
00351 934 772 173
00351 968 520 063

Parking
Free parking for delegates will be available on the Venue.

Tips
Indicative price for a taxi trip from airport to Alfândega – 25€

Complementary Tips, Cost of living in Porto:

<table>
<thead>
<tr>
<th>RESTAURANTS</th>
<th>AVG.</th>
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</thead>
<tbody>
<tr>
<td>MEAL, INEXPENSIVE RESTAURANT</td>
<td>6.00 €</td>
</tr>
<tr>
<td>MEAL FOR 2, MID-RANGE RESTAURANT, THREE-COURSE</td>
<td>30.00 €</td>
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<tr>
<td>MCMEAL AT MCDONALDS (OR EQUIVALENT COMBO MEAL)</td>
<td>5.50 €</td>
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<tr>
<td>DOMESTIC BEER (0.5 LITER DRAUGHT)</td>
<td>1.50 €</td>
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<tr>
<td>IMPORTED BEER (0.33 LITER BOTTLE)</td>
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<tr>
<td>CAPPUCCINO (REGULAR)</td>
<td>0.92 €</td>
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<tr>
<td>COKE/PEPSI (0.33 LITER BOTTLE)</td>
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<tr>
<td>WATER (0.33 LITER BOTTLE)</td>
<td>0.81 €</td>
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### DAY 1
- **Room 1 / Infante**: Check In
- **Room 2 / D. Maria**: Opening Session
  - 08.00: Key Note
  - 08.45: Key Note
  - 09.00: Key Note
  - 09.30: Key Note
  - 10.00: Key Note
  - 10.30: Key Note
  - 11.00: Coffee Break
  - 11.15: Key Note
  - 11.45: Experts, Experiences & Landmark Projects
  - 12.00: Structural Analysis
    - 12.45: Key Note
  - 12.30: Monitoring & Maintenance & Management
  - 13.00: Lunch
  - 13.30: Key Note
  - 14.00: Key Note
  - 14.15: Key Note
  - 14.30: Conceptual Design
  - 14.45: Rehabilitation
  - 15.00: Key Note
  - 15.15: Key Note
  - 15.30: Conceptual Design
  - 15.45: Monitoring & Maintenance & Management
  - 16.00: Coffee Break
  - 16.15: Innovative Construction Methods
  - 16.30: Experts, Experiences & Landmark Projects
  - 16.45: Accidents and Incidents & Extreme Loads
  - 17.00: Special Foundations and Geotechnical and Site Investigations
  - 17.15: International Prize - Innovation in Bridge Engineering
  - 17.30: Boat Trip - "Bridges of Porto"
  - 18.00: Porto of Honor
  - 18.15: Dinner of the Conference
- **Room 3 / D. Luís**

### DAY 2
- **Room 1 / Infante**: Key Note
- **Room 2 / D. Maria**: Life Cycle
- **Room 3 / D. Luís**: Safety & Serviceability
  - 09.00: Key Note
  - 09.45: Key Note
  - 10.00: Key Note
  - 10.15: Key Note
  - 10.30: Key Note
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  - 19.00: Key Note
  - 19.30: Key Note

### DAY 3
- **Room 1 / Infante**: Innovative Construction Methods
- **Room 2 / D. Maria**: Experts, Experiences & Landmark Projects
- **Room 3 / D. Luís**: Conceptual Design
  - 09.00: Key Note
  - 09.30: Key Note
  - 09.45: Key Note
  - 10.00: Key Note
  - 10.15: Key Note
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  - 18.30: Key Note
  - 19.00: Key Note
  - 19.30: Key Note

**THE ORGANIZING COMMITTEE RESERVES THE RIGHT TO INTRODUCE MINOR CHANGES IN PRESENT PROGRAM.**
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<thead>
<tr>
<th>Time</th>
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<th>Room 2 / D. MARIA</th>
<th>Room 3 / D. LUÍS</th>
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<tbody>
<tr>
<td>08.00</td>
<td>CHECK IN</td>
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<td>09.30</td>
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<td>CHAIR: MAYOR OF PORTO</td>
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<td>CHAIR: RUI CALÇADA</td>
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<tr>
<td>10.00</td>
<td>MULTI-SPAN LARGE BRIDGES – INTERACTION BETWEEN DESIGN AND CONSTRUCTION (KNL7)</td>
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<td>PRESENTED BY ARNE FREDERIKSEN BÆKSTED</td>
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<td>10.45</td>
<td>MULTI-SPAN EXTRADOSED BRIDGES (KNL1)</td>
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<td>PRESENTED BY AKIO KASUGA</td>
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<td>11.00</td>
<td>COFFEE BREAK</td>
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<td>11.30</td>
<td>SYMPOSIUM: EXPERTS, EXPERIENCES &amp; LANDMARK PROJECTS</td>
<td>SYMPOSIUM: STRUCTURAL ANALYSIS</td>
<td>SYMPOSIUM: MONITORING &amp; MAINTENANCE &amp; MANAGEMENT</td>
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<tr>
<td></td>
<td>CHAIRS: AKIO KASUGA AND A. FREDERIKSEN BÆKSTED</td>
<td>CHAIRS: PEDRO MOAS AND CELSO IGLESIAS</td>
<td>CHAIRS: MARIO PIMENTEL AND MANUEL PIPA</td>
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<tr>
<td>11.30</td>
<td>BRIDGE OVER THE CÁDIZ BAY, SPAIN (1147)</td>
<td>BIG BRIDGE IN PÉRGOLA FOR HIGH VELOCITY TRAINS IN SPAIN (1036)</td>
<td>SURVEILLANCE OF CONTINUOUS PRECAST CONCRETE BRIDGE DECKS SUPPORTED BY MONITORING-BASED TECHNIQUES (1215)</td>
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<tr>
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<td>PRESENTED BY A. MARTÍNEZ</td>
<td>PRESENTED BY C. JURADO</td>
<td>PRESENTED BY C. SOUSA</td>
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<tr>
<td>11.45</td>
<td>INNOVATIVE ERECTION METHODS OF STEEL CABLE-STAYED BRIDGES (1213)</td>
<td>REINVESTIGATION OF POST-TENSIONED BRIDGE OVER BITLIS RIVER (1198)</td>
<td>MONITORING BASED ASSESSMENT OF FATIGUE RESISTANCE OF 40 YEAR OLD PC BRIDGES (1015)</td>
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<td>PRESENTED BY M. DE MIRANDA</td>
<td>PRESENTED BY B. D. ÖZTÜRK</td>
<td>PRESENTED BY H. WEIHER</td>
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<tr>
<td>12.00</td>
<td>BALUARTE BRIDGE EXECUTIVE PROJECT (1248)</td>
<td>STRESSING SEQUENCE OF STEEL CABLE-STAYED BRIDGES BUILT BY CANTILEVERING (1193)</td>
<td>A NOVEL INSPECTION METHOD FOR ORTHOTROPIC STEEL DECKS USING PHASED ARRAY ULTRASONIC TESTING (1074)</td>
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<td>PRESENTED BY G. R. ARGUELLES</td>
<td>PRESENTED BY A. RECUPERO</td>
<td>PRESENTED BY T. MAKITA</td>
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<td>12.15</td>
<td>STRUCTURAL SOLUTIONS AND CONSTRUCTION METHODS FOR THE MAIN CROSSING OF THE MERSEY GATEWAY BRIDGE PROJECT (1163)</td>
<td>A GRAPHIC, EXACT METHOD FOR ANALYZING HYPERSTATIC SPATIAL PERGOLAS (1084)</td>
<td>INVESTIGATIONS OF POST TENSIONED BRIDGES WITH CRITICAL PRESTRESSING STEEL REGARDING HYDROGEN INDUCED CRACKING (HIC) (1034)</td>
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<td>PRESENTED BY G. D. MOIR</td>
<td>PRESENTED BY A. G. LACORT</td>
<td>PRESENTED BY A. W. GUTSCH</td>
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<td>12.30</td>
<td>DESIGN OF THE LONG-SPAN FOOTBRIDGE OVER THE BUG RIVER IN NIEMIROW (1060)</td>
<td>INVESTIGATION ON STABILITY PROBLEMS AS A SECOND ORDER THEORY PROBLEM FOR PIERS WITH PRACTICALLY INFINITE BENDING STIFFNESS (1046)</td>
<td>DELAYED DEFORMATIONS OF CONCRETE STRUCTURES: THE SAVINES BRIDGE AND THE CHEVIRE BRIDGE (1124)</td>
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<td>PRESENTED BY J. BILISZCZUK</td>
<td>PRESENTED BY V. KARATZAS</td>
<td>PRESENTED BY J-P. SELLIN</td>
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<td>12.45</td>
<td>THE RUSSKY BRIDGE: PYLONS DESIGN APPROACH OPTIMIZATION (1067)</td>
<td>SUSPENSION CABLES BRIDGE AND ARCHES (1035)</td>
<td>LASER SCANNER IN IDENTIFICATION OF PATHOLOGICAL MANIFESTATIONS IN CONCRETE (1191)</td>
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<td>PRESENTED BY V. E. RUSANOV</td>
<td>PRESENTED BY L. M. LAGINHA</td>
<td>PRESENTED BY F. BORDIN</td>
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<td>13.00</td>
<td>KASSUENE BRIDGE OVER ZAMBEZI RIVER IN TETE, MOZAMBIQUE (1103)</td>
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<td>USING DATA MINING AND NUMERICAL SIMULATIONS FOR ON-LINE MONITORING OF LONG SPAN BRIDGES (1012)</td>
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<td>PRESENTED BY T. MENDONÇA</td>
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<td>PRESENTED BY J. SANTOS</td>
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<td>13.15</td>
<td>LUNCH</td>
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### ROOM 1 / INFANTE

**14.30**
**VIADUCTS WITH PROGRESSIVELY ERECTED DECKS (KNL3)**
Presented by Jiri Strasky

**15.00**
**RECENT ACHIEVEMENTS IN THE DESIGN AND CONSTRUCTION OF MULTI-Span CABLE SUPPORTED BRIDGES IN CHINA (KNL8)**
Presented by Aijing Chen

**15.30**
**THREE SPAN FLOATING SUSPENSION BRIDGE CROSSING THE BJØRNAFJORD (1090)**
Presented by S. Holtberget

**16.00**
**DESIGN OF THE NANYU BRIDGE (1255)**
Presented by J. López

**16.15**
**A STUDY ON VEHICLE LIVE LOAD DESIGN BASED ON ACTUAL VEHICLE LOAD FOR A MULTI-Span LARGE CABLE-STAYED BRIDGE (1088)**
Presented by H. Sugiyama

**16.30 DAY 1**
**COFFEE BREAK**

**17.00**
**AN INNOVATIVE SYSTEM OF PRECAST SEGMENTAL SPAN-BY-SPAN CONSTRUCTION FOR SPAN LENGTHS OF ABOVE 100 M (1125)**
Presented by J. Muñoz-Rojas

**17.15**
**FLEXIARCH-STRESS RIBBON COMBINATION FOR MULTI-Span PEDESTRIAN BRIDGES (1098)**
Presented by A. E. Long

**17.30**
**BALANCED LIFT METHOD FOR THE CONSTRUCTION OF BRIDGES WITH TWO SPANS (1078)**
Presented by S. Foremnik

**17.45**
**HIGH PRODUCTIVITY IN BRIDGE CONSTRUCTION – THE OPS EFFECT (1250)**
Presented by H. Coelho

**18.00**
**SWIVEL LOWERING OPERATION OF THE VIADUCT OVER THE RIVER TERA (1010)**
Presented by M. Biedma

**18.15**
**PRESTRESSED I-BEAMS MADE OF ULTRA-HIGH PERFORMANCE CONCRETE FOR CONSTRUCTION OF RAILWAY BRIDGES (1189)**
Presented by P. Tej

**18.30**
**BOAT TRIP - “BRIDGES OF PORTO”**

**19.30**
**PORT OF HONOR**

### ROOM 2 / D. MARIA

**14.45**
**PRESENTATION OF A B-WIM SYSTEM IN A CENTENARY STEEL TRUSS BRIDGE (1220)**
Presented by F. Cavadas

**15.15**
**RECENT ACHIEVEMENTS IN THE DESIGN AND CONSTRUCTION OF MULTI-Span CABLE SUPPORTED BRIDGES IN CHINA (KNL8)**
Presented by Aijing Chen

**15.30**
**INNOVATIVE REHABILITATION OF LARGE BRIDGES - THE INDIAN WAY (1079)**
Presented by P. V. Manjure

**15.45**
**LONG RAILWAY VIADUCTS WITH SPECIAL SPANS; PART 1. ARCH CONSTRUCTION BY BALANCED CANTILEVER WITH AUXILIARY CABLES (1155)**
Presented by A. Martínez

**16.00**
**WIDENING OF SAN TIMOTEO AND CANERO VIADUCTS (1014)**
Presented by M. Biedma

**16.15**
**IMPELLATION OF A B-WIM SYSTEM IN A CENTENARY STEEL TRUSS BRIDGE (1220)**
Presented by H. Sakai

**16.30**
**THE IMPREGNATION TECHNIQUE PROVIDES CORROSION PROTECTION TO GROUTED POST-TENSIONING TENDONS (1065)**
Presented by D. Whitmore

**17.00**
**AN INNOVATIVE SYSTEM OF PRECAST SEGMENTAL SPAN-BY-SPAN CONSTRUCTION FOR SPAN LENGTHS OF ABOVE 100 M (1125)**
Presented by S. Foremnik

**17.15**
**MULTI-SPAN BRIDGE CROSSINGS FOR IMPROVED ROAD ACCESS TO SZCZECIN SEA PORT (1039)**
Presented by J. Holowaty

**17.30**
**DESIGN AND PROOF CHECKING OF FOUNDATION, SUBSTRUCTURE AND SUPERSTRUCTURE OF RAIL CUM ROAD BRIDGE AT MUNGER, BIHAR, INDIA (1190)**
Presented by P. G. Venkatram

**17.45**
**CAUSES OF THE BRIDGE FALSEWORK COLLAPSE NEAR LEVOČA IN SLOVAKIA (1047)**
Presented by P. Paulík

**18.00**
**LARGE MULTI-Span BRIDGES BUILT IN RECENT YEARS IN POLAND (1059)**
Presented by J. Biliszczuk

**18.15**
**CHIAPAS BRIDGE (1249)**
Presented by G. R. Arguelles

**18.30**
**CEIRA BRIDGE FOUNDATIONS: COMBINED MICROPILE AND FOOTING FOUNDATIONS (CMFF), STATIC LOAD TESTS (1161)**
Presented by S. Gil

**19.30**
**PORT OF HONOR**

### ROOM 3 / D. LUÍS

**14.45**
**IMPLEMENTATION OF A B-WIM SYSTEM IN A CENTENARY STEEL TRUSS BRIDGE (1220)**
Presented by F. Cavadas

**15.15**
**SYMPOSIUM: MONITORING & MAINTENANCE & MANAGEMENT CHAIRS: J. Figuerias and J. Santos

**15.30**
**INNOVATIVE REHABILITATION OF LARGE BRIDGES - THE INDIAN WAY (1079)**
Presented by P. V. Manjure

**15.45**
**WIDENING OF SAN TIMOTEO AND CANERO VIADUCTS (1014)**
Presented by M. Biedma

**16.00**
**MAINTENANCE METHOD FOR CABLE-STAYED AND EXTRADOSED BRIDGE WITH COMPOSITE MAIN GIRDER (1165)**
Presented by H. Sakai

**16.15**
**CONSTRUCTION CONTROL OF A LONG-SPAN SINGLE PYLON CABLE-STAYED BRIDGE (1011)**
Presented by C. Liu

**16.30**
**SYMPOSIUM: INNOVATIVE CONSTRUCTION METHODS CHAIRS: AIRONG CHEN AND JOSÉ ROMO

**17.00**
**HARAMAIN HIGH SPEED RAILWAY LINE (1167)**
Presented by M. Biedma

**17.15**
**MULTI-SPAN BRIDGE CROSSINGS FOR IMPROVED ROAD ACCESS TO SZCZECIN SEA PORT (1039)**
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<th>Room 3 / D. LUÍS</th>
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<tbody>
<tr>
<td>09:00</td>
<td>THIRD BOSPHORUS BRIDGE (KNL10) - PART 1 PRESENTED BY M. VIRLOGEUX</td>
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<td>09:30</td>
<td>THIRD BOSPHORUS BRIDGE (KNL10) - PART 2 PRESENTED BY J.F. KLEIN</td>
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<td>09:45</td>
<td>SYMPOSIUM: CONCEPTUAL DESIGN CHAIRS: JAVIER ROJAS AND MAURICIO LUSTGARTEN</td>
<td>SYMPOSIUM: LIFE CYCLE</td>
<td>EXPERTS, EXPERIENCES &amp; LANDMARK PROJECTS CHAIRS: PAULO CRUZ AND ANTONIO SOUZA</td>
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<td>10:00</td>
<td>DEVELOPMENT OF A SUBMERGED FLOATING TUBE BRIDGE FOR CROSSING OF THE BJRJNAFJORD (1204) - PRESENTED BY A. MINORETTI</td>
<td>APPLICATION OF THE MONTE-CARLO METHOD TO CALCULATE THE LIFE-CYCLE COSTS OF BRIDGES (1001) - PRESENTED BY C. HOFSTADLER</td>
<td>AN EFFICIENT METHODOLOGY FOR FATIGUE DAMAGE ASSESSMENT OF CRITICAL DETAILS ON A LONG SPAN COMPOSITE RAILWAY BRIDGE (1177) - PRESENTED BY C. M. C. ALBUQUERQUE</td>
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<td>10:15</td>
<td>LONG RAILWAY VIADUCTS WITH SPECIAL SPANS. PART 2: ARCH CONSTRUCTION BY TILTING (1143) - PRESENTED BY J. MUÑOZ-ROJAS</td>
<td>SELECTIVE USE OF NON CORROSIIVE REBAR TO INCREASE CONCRETE DURABILITY (1174) - PRESENTED BY A. E. C. BORDERON</td>
<td>CYCLIC BEHAVIOR OF CONTINUOUS RAILWAY VIADUCTS MADE WITH U-SHAPED PRECAST CONCRETE GIRDER (1197) - PRESENTED BY C. SOUSA</td>
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<td>10:30</td>
<td>PARTICULAR DESIGN FEATURES FOR A LONG SPAN CABLE-STAYED BRIDGE OVER THE HARBOUR OF PORT LOUIS, MAURITIUS (1188) - PRESENTED BY J. JUNGWIRTH</td>
<td>MULTI-SPAN BRIDGE BYPASS OVER THE DŻIWNA STRAIT (1042) - PRESENTED BY J. HOŁOWATY</td>
<td>CONCRETE BOX GIRDER BRIDGE ASSESSMENT – A STIFFNESS ADAPTATION APPROACH (1251) - PRESENTED BY D. BEGG</td>
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<td>10:45</td>
<td>FOUR SPANS CONTINUOUS CABLE STAYED BRIDGES WITHOUT EXTRA CABLES (1212) - PRESENTED BY J. ROMO</td>
<td>THE TIED ARCH BRIDGE OF THE SAALE-ELSTER-VIADUCT (1186) - PRESENTED BY W. EILZER</td>
<td>RESIDUAL BRIDGES BEARING CAPACITY ANALYSIS DURING SERVICE PERIOD SUBJECT TO SAFETY VARIABILITY (1061) - PRESENTED BY V. E. RUSANOV</td>
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<td>MULTI-SPAN LARGE DECKS – THE ORGANIC PRESTRESSING IMPACT - PRESENTED BY P. PACHECO</td>
<td>THE PATANI BRIDGE (NIGERIA): INNOVATIVE CONSTRUCTION METHODS (1135) - PRESENTED BY P. STELLATI</td>
<td>ALKALI-SILICA REACTION, ASR – REVIEW ON HOW TO DEAL WITH ASR IN CONCRETE STRUCTURES (1221) - PRESENTED BY J. CUSTÓDIO</td>
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<td>11:45</td>
<td>RION-ANTIRION BRIDGE – CHALLENGING EARTHQUAKES (1182) PRESENTED BY E. JOLY</td>
<td>INNOVATIVE SPLICED GIRDER METHOD FOR MULTI SPAN BRIDGES (1209) - PRESENTED BY N. SKOLNICK</td>
<td>LIGHTWEIGHT CONCRETE FOR LONG-SPAN BRIDGES (1164) - PRESENTED BY P. HOBEN</td>
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<td>12:00</td>
<td>VIADUCT OVER RIVER ULLA IN THE SPANISH ATLANTIC HIGH SPEED RAILWAY LINE: AN OUTSTANDING COMPOSITE STEEL-CONCRETE TRUSS BRIDGE (1170) - PRESENTED BY F. MILLANES</td>
<td>INNOVATIVE FORMWORK SYSTEMS IN BRIDGE CONSTRUCTION – CASE STUDIES (1025) - PRESENTED BY M. KAMLETHNER</td>
<td>CABLE STAYED FOOTBRIDGE WITH THE DECK MADE OF UHPC (1048) - PRESENTED BY J. L. VETEK</td>
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<td>12:15</td>
<td>JUSCELINO KUBITSCHEK BRIDGE, BRASÍLIA, BRAZIL (1192) PRESENTED BY F. BOTTO DE BARROS</td>
<td>BUILDING THE WORLD LARGEST HIGH SPEED TRAIN ARCH BRIDGES WITH MOVABLE SCAFFOLDING SYSTEMS (1038) - PRESENTED BY A. A. PÓVOAS</td>
<td>NON-DESTRUCTIVE MEASUREMENTS TO EVALUATE FIBER DISPERSION AND CONTENT IN UHPFRC REINFORCEMENT LAYERS (1219) - PRESENTED BY S. NUNES</td>
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<td>12:30</td>
<td>TUNEB – TOWARDS A GLOBAL WORLD (1089) PRESENTED BY E. SIVIERO</td>
<td>DECK FORCES OF A CABLE-STAYED BRIDGE – “ANALYSIS OF THE CONSTRUCTION AND THE IN-SERVICE PHASES” (1227) - PRESENTED BY P. ALMEIDA</td>
<td>NEW TEST METHODS FOR STAY CABLE SYSTEMS (1023) - PRESENTED BY A. W. GUTSCH</td>
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<td>12:45</td>
<td>CROSSING OF BJRJNAFJORD – FLOATING BRIDGE (1070) PRESENTED BY B. VILLORIA</td>
<td>PRELIMINARY ASSESSMENT OF WIND ACTIONS IN LARGE SPAN MSS (1109) - PRESENTED BY A. RESENDE</td>
<td>MECHANICAL PROPERTIES AND EXPLOSIVE SPALLING BEHAVIOR OF THE RECYCLED STEEL FIBER REINFORCED ULTRA-HIGH-PERFORMANCE CONCRETE (1224) - PRESENTED BY G. F. PENG</td>
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<td>CHAIR: João Almeida</td>
<td>CHAIRS: Tiago Mendonça and Filemon Botto de Barros</td>
<td>CHAIRS: Agustin G. Lacort and Filipe Magalhães</td>
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<td><strong>DESIGN AND CONSTRUCTION OF SEA-CROSSING BRIDGES - A REVIEW (KNL2)</strong></td>
<td><strong>QUEENSFERRY CROSSING: ROLE OF CONCRETE IN THE DESIGN AND EXECUTION OF THE PROJECT (1081) - PRESENTED BY P. Curran</strong></td>
<td><strong>NEW PUMAREJO BRIDGE OVER THE RIVER MAGDALENA IN BARRANQUILLA, COLOMBIA (1153) - PRESENTED BY J. Muñoz-Mojas</strong></td>
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<td>PRESENTED BY Naeem Hussain</td>
<td><strong>COMPARATIVE STUDY OF PRESTRESSING CONSUMPTIONS IN 7 DIFFERENT CONSTRUCTIVE METHODS FOR 75 M MULTI-SPAN BOX GIRDER (1117) - PRESENTED BY B. Lima</strong></td>
<td><strong>MULTI-SPAN BRIDGES: THE FIRST CHILEAN EXPERIENCE AND FUTURE CHALLENGES (1093) - PRESENTED BY M. A. Valenzuela</strong></td>
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<td><strong>THE RUYI SEA CROSSING (KNL11)</strong></td>
<td><strong>DELIVERING THE PADMA MULTIPURPOSE BRIDGE PROJECT, BANGLADESH (1181) - PRESENTED BY W. K. Wheeler</strong></td>
<td><strong>THE SOUTH APPROACH VIADUCT OF IZMİT BAY CROSSING PROJECT (1245) - PRESENTED BY T. Kösüş</strong></td>
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<td>PRESENTED BY W. Elzer</td>
<td><strong>OPTIMIZATION OF CABLE WEIGHT IN MULTI-SPAN CABLE-STAYED BRIDGES. APPLICATION TO THE FORTH REPLACEMENT CROSSING (1178) - PRESENTED BY A. Baldomír</strong></td>
<td><strong>APPLICATION OF NONLINEAR FEM TO EVALUATE LOAD BEARING CAPACITIES - CAPABILITY AND LIMITATIONS (1228) - PRESENTED BY S. Kattenstedt</strong></td>
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<td><strong>FINITE ELEMENT MODELING OF THE FATIH SULTAN MEHMET SUSPENSION BRIDGE (1200) - PRESENTED BY S. A. Kilic</strong></td>
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<td><strong>NEW PUMAREJO BRIDGE OVER THE RIVER MAGDALENA IN BARRANQUILLA, COLOMBIA (1153) - PRESENTED BY J. Muñoz-Mojas</strong></td>
<td><strong>MULTI-SPAN BRIDGES: THE FIRST CHILEAN EXPERIENCE AND FUTURE CHALLENGES (1093) - PRESENTED BY M. A. Valenzuela</strong></td>
<td><strong>NUMERICAL SIMULATION OF WIND PRESSURE OF A CONTINUOUS FIN-BACK BRIDGE (1022) - PRESENTED BY M. Fu</strong></td>
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<td><strong>DELIVERING THE PADMA MULTIPURPOSE BRIDGE PROJECT, BANGLADESH (1181) - PRESENTED BY W. K. Wheeler</strong></td>
<td><strong>OPTIMIZATION OF CABLE WEIGHT IN MULTI-SPAN CABLE-STAYED BRIDGES. APPLICATION TO THE FORTH REPLACEMENT CROSSING (1178) - PRESENTED BY A. Baldomír</strong></td>
<td><strong>MODELING BRIDGE CONSTRUCTION PHASING BY THE BALANCED CANTILEVER METHOD - “COMPARISON BETWEEN PREDICTED AND REAL CAMBER VALUES” (1226) - PRESENTED BY L. G. Castro</strong></td>
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<td><strong>CONSTRUCTION AND DESIGN FEATURES OF THE BRIDGE OVER THE DANUBE RIVER, BULGARIA (1146) - PRESENTED BY A. Martínez</strong></td>
<td><strong>BRIDGE ACROSS THE WASCHMÜHL VALLEY, KAISERSLAUTERN, GERMANY A HARMONIC SYMBIOSIS BETWEEN A HISTORIC MONUMENT AND A NEW INNOVATIVE BRIDGE (1184) - PRESENTED BY W. Elzer</strong></td>
<td><strong>RATIONAL AND PRACTICAL METHOD FOR CAMBER CONTROL IN BRIDGES BUILT BY SUCCESSIVE SEGMENTS (1096) - PRESENTED BY R. N. Oyamada</strong></td>
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<td><strong>SYMPOSIUM: MONITORING &amp; MAINTENANCE &amp; MANAGEMENT</strong></td>
<td><strong>KATEMBE BRIDGE OVER ESPÍRITO SANTO ESTUARY, IN MAPUTO (1085) - PRESENTED BY T. Mendonça</strong></td>
<td><strong>APPLICATION OF NONLINEAR FEM TO EVALUATE LOAD BEARING CAPACITIES - CAPABILITY AND LIMITATIONS (1228) - PRESENTED BY S. Kattenstedt</strong></td>
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<td><strong>DYNAMIC CHARACTERIZATION AND CONTINUOUS DYNAMIC MONITORING OF LONG SPAN BRIDGES (1154) - PRESENTED BY E. Caetano</strong></td>
<td><strong>KATEMBE BRIDGE OVER ESPÍRITO SANTO ESTUARY, IN MAPUTO (1085) - PRESENTED BY T. Mendonça</strong></td>
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<td><strong>INVESTIGATION AND COUNTERMEASURES FOR FATIGUE CRACKS THAT EMERGED ON THE FINGER JOINT OF THE CABLE-STAYED BRIDGE (1166) - PRESENTED BY T. Kosuş</strong></td>
<td><strong>THE SOUTH APPROACH VIADUCT OF IZMİT BAY CROSSING PROJECT (1245) - PRESENTED BY N. Gungör</strong></td>
<td><strong>THERMAL ANALYSIS OF A FIN-BACK BRIDGE UNDER SUDDEN DROP IN TEMPERATURE (1020) - PRESENTED BY F. Tian</strong></td>
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<td><strong>THE SOUTH APPROACH VIADUCT OF IZMİT BAY CROSSING PROJECT (1245) - PRESENTED BY N. Gungör</strong></td>
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<td><strong>EVALUATION OF THE FATIGUE CRACK FORMATION IN CANTILEVER BRACKETS OF A MULTI-SPAN RAILWAY STEEL BOX GIRDER BRIDGE (1113) - PRESENTED BY L. R. Ticona Melo</strong></td>
<td><strong>PROJECT WESTGATE – LEKKI BELTWAY BRIDGE, LAGOS, NIGERIA (1196) - PRESENTED BY C. M. Bednarski</strong></td>
<td><strong>“BEAM SECTIONAL ANALYSIS” AN INNOVATIVE TECHNIQUE FOR ANALYSIS OF BRIDGE SUPERSTRUCTURE (1233) - PRESENTED BY K. Kashefi</strong></td>
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<td><strong>PROJECT WESTGATE – LEKKI BELTWAY BRIDGE, LAGOS, NIGERIA (1196) - PRESENTED BY C. M. Bednarski</strong></td>
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<td><strong>ASSESSMENT OF THERMAL ACTIONS IN THE STEEL BOX GIRDER OF THE MILLAU VIADUCT (1092) - PRESENTED BY Z. Hajar</strong></td>
<td><strong>EXPERIENCE OF SOME LONG MULTI-SPAN BRIDGES IN QUEENSLAND, AUSTRALIA (1201) - PRESENTED BY W. K. Wheeler</strong></td>
<td><strong>FATIGUE ANALYSIS INDUCED BY VIBRATIONS IN STAY-CABLES SUBJECTED TO ALONG WIND TURBULENCE COMPONENT (1027) - PRESENTED BY A. Recupero</strong></td>
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<td><strong>EXPERIENCE OF SOME LONG MULTI-SPAN BRIDGES IN QUEENSLAND, AUSTRALIA (1201) - PRESENTED BY W. K. Wheeler</strong></td>
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<td>THE OCTAVIO FRIAS DE OLIVEIRA AND ANITA GARIBALDI</td>
<td>CABLE-STAYED BRIDGES (KNL5) PRESENTED BY CATÃO FRANCISCO RIBEIRO</td>
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<td>LARGE VIADUCTS, SOME EXECUTIONS A FEW IDEAS (KNL1) - VIDEO KNL</td>
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<td>SYMPOSIUM: CONCEPTUAL DESIGN CHAIRS: CATÃO RIBEIRO AND JAVIER FERNANDEZ</td>
<td>SYMPOSIUM: INNOVATIVE CONSTRUCTION METHODS</td>
<td>EXPERTS, EXPERIENCES &amp; LANDMARK PROJECTS CHAIRS: MIGUEL ORTEGA AND RENATO BASTOS</td>
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<td>11.45</td>
<td>LONG RAILWAY VIADUCTS WITH SPECIAL SPANS: PART-3. PRECAST GIRDERs (1152) - PRESENTED BY C. IGLESIAS</td>
<td>CABRIL RIVER VIADUCT IN COFRENTES (VALENCIA, SPAIN) BYPASS AT N-330. CONSTRUCTION DESIGN (1241) - PRESENTED BY B. DOMÍNGUEZ</td>
<td>FATIGUE ANALYSIS OF CABLE ANCHORAGES ON CABLE - STAYED BRIDGES (1033) - PRESENTED BY N. A. M. KHAIROUSSALEH</td>
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<td>COMPARISON OF VARIANTS FOR NEW PELJESAC BRIDGE IN CROATIA (1246) - PRESENTED BY J. RACIC</td>
<td>CONSTRUCTION OF PANIPAT ELEVATED EXPRESSWAY ON NH-1 ON BOT BASIS (1073) - PRESENTED BY P. G. VENKATRAM</td>
<td>MANAGEMENT OF THE SEVERN BRIDGE SUSPENSION BRIDGE (1004) PRESENTED BY C. R. HENDY</td>
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<td>STRAIT CROSSING OF THE THERMAIKOS GULF WITH A MIXED LONG-SPAN BRIDGE AND SUBSEA TUNNEL SYSTEM (1172) - PRESENTED BY P. SPYRIDIS</td>
<td>CONSTRUCTION OF CABLE- STAYED BRIDGE OVER THE DRAVA RIVER ON CORRIDOR VC- CROATIA (1037) - PRESENTED BY P. SESAR</td>
<td>IMPROVED STRUCTURAL HEALTH MONITORING STRATEGIES FOR BETTER MANAGEMENT OF CIVIL INFRASTRUCTURE SYSTEMS (1024) - PRESENTED BY C. R. HENDY</td>
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<td>SEGMENTAL PRESTRESSED CONCRETE MULTISPAN LARGE BRIDGES (1151) - PRESENTED BY V. BARATA</td>
<td>DESIGN AND CONSTRUCTION OF VIADUCT TO MUMBAI INTERNATIONAL AIRPORT (1075) - PRESENTED BY P. G. VENKATRAM</td>
<td>MANAGEMENT OF THE M4 ELEVATED SECTION SUBSTRUCTURES (1002) - PRESENTED BY C. R. HENDY</td>
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<td><strong>SYMPOSIUM: STRUCTURAL ANALYSIS</strong>&lt;br&gt;CHAIRS: CHRIS HENDY AND RAIMUNDO DELGADO</td>
<td><strong>SYMPOSIUM: EXPERTS, EXPERIENCES &amp; LANDMARK PROJECTS</strong>&lt;br&gt;CHAIRS: JOÃO ALMEIDA AND GUY FRÉMONT</td>
<td>**SYMPOSIUM: CONCEPTUAL DESIGN</td>
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<td><strong>NON-LINEAR ULS ANALYSIS OF LONG-SPAN REINFORCED CONCRETE ARCHES TO EN 1992 (1199)</strong> - PRESENTED BY M. ORTEGA</td>
<td><strong>PINHAL INTERIOR MOTORWAY CONCESSION - IC3 - SECTION CONDEIXA - COIMBRA - SPECIAL ENGINEERING STRUCTURES - CONSTRUCTION PROCESSES (1179)</strong> - PRESENTED BY N. AMARO</td>
<td><strong>EXPERIENCE OF SOME LONG MULTI-SPAN BRIDGES IN QUEENSLAND, AUSTRALIA, PART 2 (1253)</strong> - PRESENTED BY W. K. WHEELER</td>
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<td><strong>OPTIMIZED BRIDGE DECK DESIGN USING A GENETIC ALGORITHM (1198)</strong> - PRESENTED BY B. LIMA</td>
<td><strong>DESIGN AND CONSTRUCTION OF FLYOVERS IN OUTER RING ROAD, DELHI (1091)</strong> - PRESENTED BY K. GANESH</td>
<td><strong>STRATEGY FOR DURABILITY OF STRUCTURAL CONCRETE IN MEGA-SEALINKS IN TROPICAL SEA-WATERS (1133)</strong> - PRESENTED BY V. K. RAJNA</td>
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<td><strong>STIFFENED FLANGES USED IN STEEL BOX GIRDER BRIDGES (1193)</strong> - PRESENTED BY P. S. FERREIRA</td>
<td><strong>VIADUCT OVER RIVER DEBA IN THE “Y-BASQUE” HIGH SPEED RAILWAY LINE IN THE NORTH OF SPAIN (1171)</strong> - PRESENTED BY M. ORTEGA</td>
<td><strong>ANALYSIS OF INDICATORS IN CONCRETE PRODUCTION DECREASE IN DISTRITO FEDERAL - DF: PROBLEM NOTES AND SOLUTIONS (1208)</strong> - PRESENTED BY S. DA SILVA ARAÚJO</td>
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<td><strong>KEY NOTE</strong>&lt;br&gt;CHAIR: MANUEL PIPA</td>
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<td>15.30</td>
<td><strong>BETWIXT AND BETWEEN PORTUS AND CALE (KNL4)</strong>&lt;br&gt;PRESENTED BY A. ADÃO DA FONSECA</td>
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<td>16.00</td>
<td><strong>INTERNATIONAL PRIZE - INNOVATION IN BRIDGE ENGINEERING</strong></td>
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<td>16.15</td>
<td><strong>CLOSING SESSION</strong></td>
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SOCIAL PROGRAM

DAY 1, 18.30 – BOAT TRIP “BRIDGES OF PORTO” & PORT OF HONOR

Boarding in Alfândega Nova do Porto Building quay, the delegates will be able to enjoy the six bridges cruise. In this cruise, you will enjoy not only the magnificent overall view, but also the six bridges that connect Porto and Gaia.

You will have the opportunity to see Ribeira, D. Luís Bridge, Serra do Pilar Monastery, Infante D. Henrique Bridge, D. Maria Pia Bridge, S. João Bridge and Freixo Bridge.

As we get closer to S. João Bridge, you will be able to see Porto, World Heritage. After passing by D. Luís Bridge, we continue in the direction of Arrábida Bridge, so that you can see the mouth of the river Douro and Afurada, land of the fishermen.

Arriving at Alfândega Nova do Porto Building quay, the guests will be able to taste a Port of Honor, with the finest Port Wines and Porto Tonic.

DAY 2, 19.30 – DINNER OF THE CONFERENCE

The Conference Dinner will be held Palacio da Bolsa which is an Historic Building where Gustave Eiffel designed the D. Maria Pia Bridge, among other projects. This building is presently the headquarters of Porto’s trade association.

EXHIBITION PLAN

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With almost 70 years of history, Mota-Engil has a business record of excellence in Portugal and in the world. Guided by a global and diversified strategy of success, the Group operates in 22 countries, asserting itself with the ability and innovation which made it national leader in the construction sector and a reference in the export of services, with 75% of its turnover originating from international markets.

Mota-Engil. A World of Inspiration.