The Seventeenth (2007) International Offshore (Ocean) and Polar Engineering Conference

5th ISOPE HPM Symposium:
Nanomaterials for Structural Application

1st ISOPE
Strain-Based Design Symposium

7th ISOPE Ocean Mining (& Gas Hydrates) Symposium

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ISOPE-2007
Corinthia Lisboa Hotel
Lisbon, Portugal; July 1–6

Technical Program

Refereed papers from 48 countries in 120 sessions and 7 plenary sessions

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Organized by:
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ISOPE, P.O. Box 189
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Lisbon, Portugal, July 1–6, 2007

The number at end of the session title indicates the tentative number of the proceedings volume. Only the changes on titles or authors the ISOPE-2007 Technical Program Committee (TPC) received in writing before January 22, 2007 are reflected in this program. Paper titles in blue color are additions to the printed version of the technical program. Final corrections will be updated in the Conference Proceedings and the Final Program. Proceedings CD-ROM (ISBN 1-880653-68-0; ISBN 978-1-880653-68-5) will be available as a set of 4 volumes (3,600 pp. est.) from ISOPE during and after the Conference.

SUNDAY, July 1
Conference Reception
17:00
To Be Announced

MONDAY 09:00

1. OCEAN & ARCTIC INDUSTRY REVIEW (V. 1)
Monday July 2 09:00 Floriana

Chair: Langen, I, University of Stavanger, Norway
Co-Chair: Isaacson, M, University of British Columbia, Canada

Opening Address
Matsui, T, ISOPE President, USA.

Engineering Challenges Driven by the Navy and Navy after Next [Oral presentation]
Gruber, P L, Office of Naval Research, USA

Subsea Development in the Ormen Lange Offshore Project
Eklund, T, Hydro Oil and Energy, Norway

Polar Rules: Are Harmonized Standards Good for Shipping?
Santos-Pedro, V, Transport Canada, Canada

East Siberian Pipeline: State and Development
Koff, GL, Russian Ministry of Emergency Situations/Rosstroy;
Bekker, AT, Far-Eastern State Technical Univ, Russia

Eurocode 8 – Design for Earthquake Resistance of Foundations
Sêco e Pinto, P S, Univ of Coimbra /LNEC, Portugal
The 1st (2007) ISOPE Strain-Based Design Symposium
at ISOPE-2007 Conference, Corinthia Lisboa Hotel
Lisbon, Portugal, July 1–6, 2007

47. SBD I: Materials I (V. 4)
Tuesday July 3 14:00 Aquamarin

Chair: Lillig, D, ExxonMobil Development Co., USA
Co-Chair: Liessem, A, Europipe, Germany

Introductory Remarks
Yong-Yi Wang, EMC-Square, USA
Eiji Tsuru, Nippon Steel, Japan
Dan Lillig, ExxonMobil Development Co., USA

X80 Linepipe Steels for Critical Applications
Siciliano, F, CBMM-Sao-Paulo, Brazil; Fazackerley, W J, EWI Microalloying International, USA

Development of a High Strength Steel Line Pipe for Strain-based Design Application
Shinohara, Y, Hara, T, Tsuru, E, Asahi, H, Terada, Y, Doi, N, Ayukawa, N, Murata, M, Nippon Steel, Japan

High Strength Linepipes with Enhanced Deformability
Mannucci, G, Guagnelli, M, Anelli, E, Centro Sviluppo Materiali, Italy

X100 Induction Heated Bends from SAW Pipe
Takahashi, N, Sumitomo Metals Industries, Japan

57. SBD II: Materials II (V. 4)
Tuesday July 3 16:20 Aquamarin

Chair: Tsuru, E, Nippon Steel, Japan
Co-Chair: Fairchild, D, ExxonMobil Upstream Research, USA

Welding Engineering for High Strain Pipelines
Newbury, B D, ExxonMobil Development, USA

Material Design for Line Pipe Steel to Minimize HAZ Softening and to Obtain Good HAZ Toughness

Microstructure Modeling of HAZ Softening and Microhardness Tests
Chen, Y, Liu, M, Wang, Y Y, Engineering Mechanics Corp of Columbus, USA

Analysis of the Retardation in Fatigue Crack Propagation Considering the Redistribution of Residual Stress Induced by Overload
Jo, Y C, Seoul National Univ; Bang, J K, STX Shipbuilding; Song, H C, MoEPO National Univ; Jung, C D, Seoul National Univ, Korea

Study on the Relationship between Yield Ratio, Uniform Elongation and Hardening Exponent of High Grade Pipeline Steel
Ji, L K, Gong, S T, Hao, C Y, Zhao, X W, Chen, H Y, Tubular Goods Research Center, CNPC; Li, X, Xi’an Shiyou Univ, China
High Strain Capacity X60 Linepipe Steels with Superior Strain Aging Resistance
Jin, H W, ExxonMobil Research & Engineering, USA

66. SBD III: Testing and Evaluation (V. 4)
Wednesday July 4 08:00 Aquamarin

Chair: Mannucci, G, CSM, Italy
Co-Chair: Lee, K, Lincoln Electric, USA

Modelling and Measurements for the Assessment of a Full Scale Pipe Bend Test
Smith, S D, Pisarski, H G, TWI, Vlattas, C, Saipem UK, UK

Recent Advances in Curved Wide Plate Testing and Implications for Strain-based Design
Fairchild, D, ExxonMobil Upstream Research, USA

Local Strength Testing for Girth Welds in X-100 Pipes
Mohr, W, Edison Welding Inst, USA

Large-scale Testing Methodology to Measure the Influence of Pressure on Tensile Strain Capacity of a Pipeline
Ginelli, P, ExxonMobil Upstream Research, USA

Evaluation of High Strength Submerged Arc Heat Affected Zone Properties Utilizing Advanced Waveform Control
Lee, K, Lincoln Electric, USA

The Effect of Weld Defect on Properties of HSAW Linepipe
Xiong, Q R, Huo, C Y, Feng, Y R, Tubular Goods Research Center, CNPC, China

Development of New UST Inspection for UOE Pipe Mill
Nagase, M, Hirose, Y, Horikiri, T, Ookuboi, H, Yamano, M, Sumitomo Metal Industries, Japan

76. SBD IV: Design and Project (V. 4)
Wednesday July 4 10:30 Aquamarin

Chair: Collberg, L, DNV, Norway
Co-Chair: Østby, E, SINTEF, Norway

Integrating Geohazard Demand and Structural Capacity Modelling within a Probabilistic Design Framework for Offshore Arctic Pipelines
Kenny, S, Barrett, J, Phillips, R, C-CORE; Popescu, R, Memorial Univ of Newfoundland, Canada

Strain-based Design Methodology for Seismic and Arctic Regions
Barbas, S T. ExxonMobil Upstream Research, USA

Tensile Strain Limits of X80 High-strain Pipelines under Seismic Loadings
Igi, S, JFE Steel; Suzuki, N, JFE R&D, Japan

Soil-pipe Interaction along Active Faults
Cocchetti, G, di Prisco, C, Galli, A, Nova, R, Italy

The Feasibility and Prospect of Strain-based Design to Pipelines in China
Chen, H Y, Ji, L K, Tubular Goods Research Center, CNPC, China

Key Issues Should be Considered for Application of Strain-based Designed Pipeline in China
Li, X, Xi’an Jiaotong Univ/CNPC/Xi’an Shiyou Univ; Li, H L, Xi’an Shiyou Univ, China

Strain-based Design of X80 Gas Pipeline in Seismic Areas in China
Gao, H, CNPC-CPPE, China
Chair: Liu, M, EMC-Square, USA
Co-Chair: Tyson, W, CANMET, Canada

Crack Driving Force in Pipelines Subjected to Large Strain & Biaxial Stress Conditions – Part 1: FEA Approach
Mohr, W, EWI, USA

Crack Driving Force in Pipelines Subjected to Large Strain & Biaxial Stress Conditions – Part 2: Influence of Material Variables
Gordon, J R, EWIMicroalloying, USA

Crack Driving Force in Pipelines Subjected to Large Strain & Biaxial Stress Conditions – Part 3: Influence of Loading Variables
Gordon, J R, EWIMicroalloying, USA

Effect of Biaxial Stress on ECA of Pipelines under Strain-based Design
Tyson, W R, Shen, G, Roy, G, CANMET Natural Resources Canada, Canada

Apparent Fracture Toughness from Constraint Considerations and Direct Testing
Wang, Y Y, Liu, M, Engineering Mechanics Corp of Columbus, USA; Horsley, D, TransCanada Pipelines, Canada

Predictive FEA Modeling of Full-scale Pressurized Tests
Minnaar, K, ExxonMobil Upstream Research, USA

Pressure Effects on Strain Concentration and Constraint for Strain-based Design
Mohr, W, Edison Welding Inst, USA

Fracture Control – Offshore Pipelines JIP: Use of ABAQUS/Explicit to Simulate Ductile Tearing in Pipes with Defects Loaded Beyond Yielding
Sandvik, A, Statoil ASA; Østby, E, SINTEF Materials and Chemistry; Thaulow, C, NTNU, Norway

Comparison of Crack Driving Force Estimation Schemes for Weld Defects in Reeled Pipelines
Tkaczyk, T, Technip UK; O’Dowd, N, Univ of Limerick; Howard, B P, Technip UK, UK

Advanced Modeling of Plasticity of Linepipe Steels with Anisotropic Texture and Complex Loading History
Liu, M, Wang, Y Y, Engineering Mechanics Corp of Columbus, USA

Effects of Strength Matching, HAZ Softening, Material Property of Line Pipe on Strain Capacity of X80 Line Pipe Girth Welded Joint Subjected to Uniaxial Tensile Loading
Motohashi, H, Hagiwara, N, Tokyo Gas, Japan
96. SBD VI: Assessment Procedures I (V. 4)  
Thursday  July 5     08:00     Aquamarin  

Chair: Wang, Y Y, EMC-Square, USA  
Co-Chair: Barbas, S, ExxonMobil Upstream Research, USA  

Development of Girth Weld Flaw Assessment Procedures for Pipelines  
Subjected to Axial Plastic Straining  
Pisarski, H G, Cheaitani, M J, TWI, UK  

A New Probabilistic Approach to Fracture Control of Offshore Pipelines: 1) Background  
Sigurdsson, G, Collberg, L, Wästberg, S, DNV, Norway  

A New Probabilistic Approach to Fracture Control of Offshore Pipelines: 2) Applications and Comparisons  
Collberg, L, Wästberg, S, DNV; Levold, E, Statoil; Sigurdsson, G, DNV, Norway  

Overview of Existing and Emerging Assessment Procedures for the Determination of Pipeline Tensile Strain Limits  
Wang, Y Y, Liu, M, Engineering Mechanics Corp of Columbus, USA  

Stress versus Strain Based Design: A Few Differences  
Liessem, A, Europipe; Knauf, G, Zimmermann, S, Salzgitter Mannesmann Forschung, Germany  

Current Research and Outstanding Issues in the Strain Based Design of Pipelines  
Wang, Y Y, Liu, M, Engineering Mechanics Corp of Columbus, USA  

Evaluation Precept for Strain Capacity of High Strength UOE Line Pipe Used in Strain-based Design Application  
Tsuru, E, Shinohara, Y, Asahi, H, Nippon Steel, Japan  

Application of WES2808 to Brittle Fracture Assessment for Gas Pipeline Girth Welds  
Kubo, T, Igi, S, JFE Steel; Suzuki, N, JFE R&D; Toyoda, M, Ohata, M, Minami, F, Osaka Univ, Japan  

Strain-based Design of High Strength Pipelines  
Wang, Y Y, Liu, M, Rudland, D, Engineering Mechanics Corp of Columbus, USA; Horsley, D, TransCanada Pipelines, Canada  

106. SBD VII: Assessments Procedures II (V. 4)  
Thursday  July 5     10:30     Aquamarin  

Chair: Hugo, E, Tenaris, Argentina  
Co-Chair: Minami, F, Osaka University, Japan  

Fracture Assessment Procedure for Structural Components under Cyclic and Dynamic Loading  
Minami, F, Ohata, M, Watanabe, D, Osaka Univ, Japan  

Fracture Control – Offshore Pipelines JIP: LINKpipe  
Berg, E, et al, NTNU, Norway  

Fracture Control – Offshore Pipelines JIP: Proposal for Strain-based Fracture Assessment Procedure  
Østby, E, et al, SINTEF Materials and Chemistry, Norway  

Fracture Control – Offshore Pipelines JIP: Results from Large Scale Testing of the Effect of Biaxial Loading on the Strain Capacity of Pipes with Defects  
Østby, E, et al, SINTEF Materials and Chemistry, Norway  

Mechanical and Fracture Mechanics Evaluation of Heat Affected Zone of Girth Welded Joints  
Ernst, H, Castelluccio, G, Bravo, R, Tenaris, Argentina
Fracture Mechanics Assessment of Displacement Controlled Installation Process of Line Pipes
Ernst, H, Bravo, R, Buschiazo, A, Tenaris, Argentina

Probabilistic Structural Reliability Assessment of Reeled Pipes – Multiple Cycles Cases
Ernst, H, Bravo, R, Passarella, D, Tenaris, Argentina

116. SBD VIII: Compressive Strain Limit and Buckling (V. 4)
Thursday July 5 14:00 Aquamarin

Chair: Suzuki, N, JFE, Japan
Co-Chair: Bruschi, R, Snamprogetti, Italy

Compressive Strain Limits and Seismic Integrity of X80 High-strain Pipelines
Suzuki, N, JFE R&D; Igi, S, JFE Steel, Japan

Methodology for Measurement of Mechanical Properties to Predict Collapse Pressure of UOE Pipe
Tsuru, E, Asahi, H, Doi, N, Murata, M, Nippon Steel, Japan

UOE Pipes for Ultra Deep Water Application: Analytical and FE Collapse Strength Prediction vs. Full Scale Tests of Thermally Treated Line Pipe
Liessem, A, Groj-Weege, J, Knauf, G, Zimmermann, S, Salzgitter Mannesmann Forschung, Germany

Buckling Behavior of API-X80 Linepipe
Kang, K B, Yoo, J Y, Ahn, S S, POSCO; Cho, W Y, Yoon, T Y, RIST, Korea

Evaluation of Strain Limit of Compressive Buckling by FE Analysis
Shitamoto, H, Sumitomo Metals Industries, Japan

Bruschi, R, Torselleti, E, Vitali, L Snamprogetti, Italy

UOE Pipes for Ultra Deep Water Application: Strength Capacity under Combined Loading Conditions for Thermally Treated Line Pipe Characteristics
Bruschi, R, Torselleti, E, Vitali, L. Snamprogetti, Italy
HOTEL RESERVATION FORM (must use this form)
Corinthia Lisbon Hotel (5-star), July 1–6, 2006

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Corinthia Lisbon Hotel: Fax: +351-217-236-364
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1099-031 Lisboa, Portugal

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  Diner's Club     American Express        JCB
  Card no.: _________________________________ 3- or 4-digit code ___
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