June 21–26

Osaka, Japan

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The Nineteenth (2009) International

Offshore (Ocean) and Polar Engineering Conference

AND

PIPELINES & RISERS

VORTEX-INDUCED VIBRATIONS

ISOPE-2009

Osaka International Convention Center
Osaka, Japan; June 21–26

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TECHNICAL PROGRAM

The Nineteenth (2009) International Offshore and Polar Engineering Conference

Osaka, Japan, June 21–26, 2009

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-2009 Technical Program Committee (TPC) received in writing before January 29, 2009 are reflected in this program. Final corrections will be updated in the Conference Proceedings of peer-reviewed papers and the Final Program. Proceedings CD-ROM (ISBN 978-1-880653-53-1; ISSN 1098-6189) will be available as a set of 4 volumes (3,500 pp. est.) from ISOPE during and after the Conference.
Proceedings papers are **indexed** by **Engineering Index** and Compendex and others.

SUNDAY, June 21

Conference Reception
Sponsored by Tsuneishi Holdings Corporation
17:00 Sakura Room, Rihga Royal Hotel, 2F

MONDAY 09:00

1. Opening General Session:

OFFSHORE AND ARCTIC REVIEW—2009 (V. 1)

Monday June 22 09:00 Rm 1003, 10F

Chair: Naito, S, Osaka Univ, Japan
Co-Chair: Jiang, X, China National Offshore Oil Corp., CNOOC, China

Conference Opening Address
Knapp, R H, President, ISOPE

Sustainable Development and Marine Transport in the Arctic Ocean -- A Perspective and Cold Regions Technology
Kitagawa, H, Ocean Policy Research Foundation, Japan

Goes Deep, China Oil and Gas Industry
Chen, W, Sr. Vice President, China National Offshore Oil Corp., China

Global Functional Organization - the Key to Successful Materials Technology Implementation
Wright, E J, ExxonMobil Development, USA

Deepwater: Past, Present and Future
Kapusta, S, Chief Scientist, Shell Global Solutions International BV, The Netherlands

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PIPELINES & RISERS

VORTEX-INDUCED VIBRATIONS

Plenary Presentation II (V 2)

Progress in Modeling of Multiphase Flows and Thermodynamics in Oil and Gas Pipelines
Hellan, Ø, Johansen, S T, Dijkhuizen, W, Mo, S, Meese, E, SINTEF, Norway; Bansal, K, Danielson, T, ConocoPhillips; Goldszal, A, Monsen, J I, Total
Introduction by Paulsen, G, Reinertsen Engineering, Norway

Plenary Presentation V (V. 2)
Wednesday June 24 14:00 Room 1007, 10F

The Hughes Glomar Explorer and a 5,100-m-long Heavy-Lift Pipe: Coupled Ship and Pipe Motions Measured in the North Pacific Ocean
Chung, J S, ISOPE, USA
Introduction by Knapp, R H, Univ of Hawaii, USA

Keynote Presentation II (V 2)

Technical Challenge in Sakhalin 1 Pipeline Project: Engineering and Construction of Offshore Pipeline, Orlan Erosion Protection and Cathodic Protection
Tokiwa, Y, Nagahamaya, S, Sakamoto, T, Nippon Steel, Japan
Introduction by Osawa, N, Osaka Univ, Japan

46. VORTEX-INDUCED VIBRATIONS I (V. 3)

An Engineering Approach to VIV for Riser Interference
Saint-Marcoux, J-F, Acergy, UK; Blevins, R, Consultant; Wu, M, Acergy, USA

Parameter Study of Simplified Assessment of Fatigue Damage for Deep Sea Riser VIV
Zhang, Q, Zhang R, Dalian Univ of Tech, China

Nonlinear Multi-Mode Interactions in Subsea Risers Undergoing Vortex-Induced Vibrations
Srinil, N, Wiercigroch, M, Univ of Aberdeen; O'Brien, P, MCS International UK; Pavlovskaia, E, Univ of Aberdeen, UK

The Viscous Flow Induced by an Arbitrary Moving Cylinder
Chu, C C, Chen, B F, National Sun Yat-Sen Univ, Taiwan, China

Vortex-Induced Vibration Analysis of the Tendon Considering the Effect of Hull's Motion
Yan, G W, Xu, F, Harbin Inst of Tech; Ou, J P, Dalian Univ of Tech, China

Vortex-Induced Vibrations of Risers due to FPDSO Heave Motions
Lei, S, Zhang, W S, Yue, Q J, Lv, W, Dalian Univ of Tech, China

55. VORTEX-INDUCED VIBRATIONS II (V. 3)

The Effect of Wavy Surface on Vortex Shedding from an Inclined Cylinder in Turbulent Flow

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Lam, K, Lin, Y F, Hong Kong Polytechnic Univ; Zou, L, Wuhan Univ of Tech; Liu, Y, Hong Kong Polytechnic Univ, China

Quasi-Steady Wake Oscillator Theory Applied to a Free Oscillation Problem of a Rigid Cylinder Undergoing VIV
Nishi, Y, Yokahama National Univ; Kokubun, K, Hoshino, K, Uto, S, National Maritime Research Inst, Japan

Numerical Study of Fluid Force Reduction on a Square Cylinder
Zhou, C Y, Wang, C, Harbin Inst of Tech, China

VIV and Wake-Induced Vibrations of Two and Three Cylinders Arranged In-Line
Etienne, S, École Polytechnique de Montréal, Canada; Fontaine, E, AMOG Consulting, Australia; Scolan, Y-M, École Centrale Marseille, France

Vertical Pipe in Pipe Marine Riser - Tow Tank Tests and VIV Observations
Derradji-Aouat, A, National Research Council of Canada, Canada

The Viscous Flow Induced by an Oscillating Circular Cylinder
Chu, C C, Chen, B F, National Sun Yat-Sen Univ, Taiwan, China

Pattern Analysis for the Vortex Induced Vibration of a Towed Cable
Jung, D H, MOERI/KORDI, Park, H I, Korea Maritime Univ, Korea

Vertical Riser VIV Simulation in Sheared Current
Huang, K, Chen, H C, Chen, C R, Texas A&M Univ, USA

Numerical Simulation of Flexible Multi-Pipe Systems Subject to Outer and Inner Flow
Chen, Z S, Kim W J, Mokpo National Univ, Korea; Yu, D Y, Ocean Univ of China, China

8. PIPELINES & RISERS I: Riser Multiphase Flow & Dynamics (V. 2)

A New Method for Location Leak in Long-Distance Pipeline and Study on Experiment
Li, J H, Shanghai Maritime Univ; Sun, Z C, Cui, L, Dalian Univ of Tech, China

Experiment and Improved Numerical Model for Hydraulic Hoist of Coarse Particles in a Vertical Pipe
Li, P, China National Inst of Standardization; Han, W, Tsinghua Univ, China

Influence of Fluid Transportation on Three-Dimensional Behaviour of an Extensible Marine Riser
Athisakul, C, Chucheepsakul, S, King Mongkut's Univ of Tech Thonburi, Thailand

Optimum Design for Fluid Flows in a Long Pipe with Respect of the Financial Cost
Brac, J, Maisonnier, G, Institut Francais du Petrole, France

An Experimental Investigation on Pressure Gradients in Horizontal Heavy Oil-Water Pipe Flows
Yao, H Y, Li, Q P, Wang, T, China National Offshore Oil Corp; Gong, J, China Univ of Petroleum, China

Experiments for Modeling Inner Fluid Effect on Hung-off Riser
Namba, Y, Uto, S, Nimura, T, Kokubun, K, Kuroda, T, National Maritime Research Inst; Miyazaki, T, Okumura, Y, JAMSTEC; Ozaki, M, Univ of Tokyo, Japan

17. PIPELINES & RISERS II: Riser (V. 2)

Reentry Control System for a Riser Pipe Experimental Model under a Steady Current
Kajiwara, H, Uemura, K, Noridomi, K, Koterayama, W, Nakamura, M, Kyushu Univ, Japan

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A Review of Test Methods for Generating Fatigue Crack Growth Rate (FCGR) Data in a Sour Environment
Holtam, C M, Baxter, D P, TWI Ltd.; Ashcroft, I A, Loughbrough Univ, UK

Reeling Deformations in Pipeline Design
Alsos, H S, Reinertsen Engineering AS, Norway; Erixon, B, Reinertsen Engineering AB, Sweden; Sxreide, T, Reinertsen Engineering AS, Norway

Recent Developments in the Critical Thermal, Corrosion and Material Issues of Flowline Pipe-in-Pipe (PIP) Systems
Jukes, P, J P Kenny; Singh, B, Garcia, J, Ionik Consulting, USA

Impact of Reel Laying on Mechanical Pipeline Properties Investigated by Full and Small Scale Reeling Simulations
Meissner, A, Erdelen-Peppler, M, Salzgitter Mannesmann Forschung; Schmidt, T, V&M Deutschland, Germany

Exploring the Challenges of Pipe-in-Pipe (PIP) Flowline Installation in Deep-Water
Sun, J, Jukes, P, Eltaher, A, J P Kenny, USA

Fatigue Analysis of Deepwater Risers Using a Hybrid Time/Frequency Domain Method
Low, Y M, Nanyang Technological Univ, Singapore

37. PIPELINES & RISERS III: Risers & Mooring (V. 2)

Clawloks™ - Development of a Bending Stiffener Latching Mechanism for Flexible Riser
Gjersoe, N F, LICenginieering; Thomsen, J R, NKT Flexibles, Vinther, J, LICengineering, Denmark

Risk Analysis Carried Out on Old Unbonded Flexible Pipe Assets
Balagué, B, Roques, J P, Furmanowski, Y, Total SA, France

Effect of Pipe Thickness on the Behavior of Flexible Pipes with Equivalent Bending Ring Stiffness
Kawabata, T, Nadamoto, Y, Izumi, A, Shimamoto, C, Inoue, K, Uchida, K, Kobe Univ, Mohri, Y, Ariyoshi, M, National Inst for Rural Engineering, Japan

Fit-For-Purpose Tool in the Design Verification Process for Floating Structures: Design of Statically Equivalent Deepwater Mooring Systems
Udoh, I I, Mercier, R, Texas A&M Univ, USA

Tension-Twist Testing of EM Cables and Wire Rope
Knapp, R H, Shimabukuro, T S, Structural Solutions, USA

Semi-Empirical Modeling for Seawater Corrosion of Wire Rope
Fontaine, E, Armstrong, R, Potts, A; AMOG Consulting; Melchers, R E, Univ of Newcastle, Australia; Chaplin, C R, Univ of Reading, UK; Francois, M, Bureau Veritas, France

47. PIPELINES & RISERS IV: Riser & SCR (V. 2)

Bottom Weighted Riser – A Novel Approach to Deepwater Riser Design
Lim, F, Tay, K Y, 2H Offshore Engineering, UK

Innovative SCR Solution and Installation Feasibility on Turret-moored FPSO in Deepwater Application
Wu, M, Branchut, J P, Huang, K, Bullock, J, Acergy, USA

SAIPEM Novel Riser Concepts for Future Deep & Ultra-Deep Water Developments - RCS & SIR
Mahoney, G P, Pionetti, F-R, SAIPEM, France

Integrated Short and Long Terms Reliability Analysis Applied to Riser Design

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Perdrizet, T, Averbuch, D, IFP, France

PURE (Premium Upset Riser Ends): Expanding the Possibilities of SCR Application
Chatterjee, A, Rohden, V, Vallourec & Mannesmann Tubes, Germany; Kumar, V, TWI Ltd., UK

On the Assessment of Extreme Response of Steel Risers Using Long-Term Response Statistics and Environmental Contour Approaches
Doria, A S, Martins, M A L, Silveira, E S S, Federal Univ of Alagoas, Brazil

Bottom Weighted Riser - A Novel Approach to Deepwater Riser Design
Lim, F, Tay, K Y, 2H Offshore Engineering, UK

SAIPEM Novel Riser Concepts for Future Deep & Ultra-Deep Water Developments - RCS & SIR
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Doria, A S, Martins, M A L, Silveira, E S S, Federal Univ of Alagoas, Brazil

64. PIPELINES & RISERS V: Riser & Dynamics (V. 2)

Hydrodynamic Behaviour of the Grouped SLOR
Lee, D, Karunakaran, D, Mair, J, Subsea 7, UK

Hydrodynamic Aspects of Pipeline Overtrawling
Teigen, P, Ilstad, H, Levold, E, StatoilHydro, Norway

Design Analysis of a Weight Added Wave Configuration of a Flexible Riser in Shallow Water
Tan, Z, Zhang, J, Ma, F, Hou, Y, Wellstream International, USA

Influence of the Type of Geometrical Imperfection on the Response of Steel Pipes Subject to Pure Bending
Arjomandi, K, Taheri, F, Dalhousie Univ, Canada

Simulation of Active Heave Compensation System Based on Dynamic Vibration Absorber for Deep Sea Mining System
Li, L J, Liu, S J, Central South Univ, China

72. PIPELINES & RISERS VI: Pipe-Soil Interactions 1 (V. 2)

Displacement and Inner Force Analysis of Span Pipeline Based on the Interaction between Pipe and Soil
Cao, X F, Qin, Y L, CNPC Research Inst of Engineering Tech, China

Effect of the Liquefaction of Buried Pipe on Structure Safety during Earthquake
Hsiao, D H, Lin, M D, National Kaohsiung Univ of Applied Science, Taiwan, China

Pile Foundation Design in Deepwater
Zhang, H, Lim, F, Jewell, G, 2H Offshore Engineering, UK

Pipe Strain and Soil Pressure Development in Frozen Lightweight Backfill
Christ, M, Kim, Y C, Korea Inst of Construction Tech; Park, J B, Seoul National Univ, Korea

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Pipe-Soil Interaction Analysis with a 3D Macroelement Model
Tian, Y H, Cassidy, M J, Univ of Western Australia, Australia

Vertical Bearing Capacity of a Partially-Embedded Pipe on Tresca Soil
Zhao, B, Gao, F P, Inst of Mechanics, CAS; Liu, J M, China National Petroleum Offshore Engineering; Wu, Y X, Inst of Mechanics, CAS, China

A Numerical Study of Ice-Soil-Pipeline Interaction
Abdalla, B A, Pike, K, Eltaher, A, Jukes, P, Duron, B, J P Kenny, USA

90. PIPELINES & RISERS VII: Pipe-Soil Interactions 2 (V. 2)

The Use of Advanced Finite Element Analysis Tools for the Design and Simulation of LNG and LPG Subsea Pipelines and Risers
Jukes, P, Sun, J, Chen, J, Brown, T S, J P Kenny, USA

Effects of Luder's Plateau on Buried Pipeline Subject to Seismic Fault Displacement Analysis
Odina, L, Conder, R J, Xodus Group, UK

Uplift Resistance of Buried Pipelines in Blocky Clay Backfill
Wang, J K, Haight S H, Univ of Cambridge; Thusyanthan, I, KW Ltd, UK

Soil Characterization of Deep Sea West African Clay: Is Biology a Source of Mechanical Strength?
Kuo, M Y, Bolton, M D, Univ of Cambridge, UK

Evaluation of Lateral Resistance for Buried Conditions around Pipe with Horizontal Loading
Kashiwagi, A, Kawabata, T, Kobe Univ; Mohri, Y, National Inst for Rural Engineering; Okuno, S, Kobe Univ; Shimura, K, Hokuriku Agricultural Administration Office; Uchida, K, Kobe Univ, Japan

Sweeping Simulation of Unburied Offshore Pipeline during Cyclic Lateral Movement
Takatani, T, Maizuru National College of Tech, Japan

Use of Thermal Imaging in Study of Heat Loss from Buried Pipelines
Thusyanthan, I, KW Ltd, UK

99. PIPELINES & RISERS VIII: Pipeline 1 (V. 2)

Geometrically Adjusted Residual Life of Corroded Pipeline under Cyclic Loading
Yukhymets, P, E. O. Paton Electric Welding Inst, Ukraine

Burst Tests on Pipeline Containing Corrosion in the Seam Weld
Benjamin, A C, Petrobras, Brazil

Ultimate Bending Capacity of Steel Pipes Considering Strain Hardening Effect
Li, X, Chen, Y, Zhu, T, Zhou, J, Dalian Univ of Tech, China

Experimental Investigation of Fatigue Strength for Subsea Pipelines Subjected to Combined Stresses
Xiao, Z G, Zhao, X L, Monash Univ, Australia

Dynamic Characteristics of Pipes with a Straight Front Crack
Zhou, J, Feng, X, H, J S, Zhu, T, Dalian Univ of Tech, China

Bending Capacity and Seismic Integrity of X65 ERW Line Pipe
Tajika, H, Suzuki, N, Horikawa, H, JFE R&D Corp, Japan

Fatigue Performances of Machined Pipe Outer Surface
Darcis, P P, Marines-Garcia, I, Tenaris Tamsa, Mexico; Di Vito, L F, Centro Sviluppo Materiali, Italy; Marques, E C, Dell'Erba, D, Tenaris, Tamsa, Mexico; Tintori, F, Armengol, M, Tenaris Dalmine, Italy; Quintanilla, H, Tenaris Tamsa, Mexico

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109. PIPELINES & RISERS IX: Pipeline 2 (V. 2)

Installation of Rigid Pipeline on Extremely Challenging Seabed
Xavier, M, Hjelmstad, O P, Subsea7, Brazil

Design of Rock Berm Cover for Offshore Pipeline LNG Project in Hong Kong
Gaudin, C, Univ of Western Australia, Australia; Landon, M M, Univ of Maine, USA; Pedersen, V, CLP Power Hong Kong, China; Kiat, C H, Lequin, W, Intecsea, Singapore

Dynamic Analysis and Crack Identification for Free Spanning Pipeline with a Fatigue Crack
Feng, X, Hu, J S, Zhu, T, Zhou, J, Dalian Univ of Tech, China

Free Span Dynamics versus Global Buckling of the High Pressure and High Temperature Pipeline
Sun, J, Jukes, P, Duan, G, J P Kenny, USA

HP/HT Pipeline Expansion Analyses and Comparison with Hot Pipe Survey
Brakstad, L, Halvorsen, V H, Reinertsen AS; Holden, O M, StatoilHydro, Norway

Integrated Structural Reliability-Finite Element Analysis of Lateral Buckling of Offshore Flowlines
Banneyake, R, Eltaher, A, Sun, J, Jukes, P, J P Kenny, USA

118. PIPELINES & RISERS X: Pipeline 3 (V. 2)

Effect of Diameter to Thickness Ratio and External Pressure on the Velocity of Dynamic Buckle Propagation in Offshore Pipeline
Omrani, Z, Abedi, K, Mostafa Gharabaghi, A, Sahand Univ of Tech, Iran

A Finite Element Method Approach on Liner Wrinkling of Snug Fit Lined Pipe
Hilberink, A, Heerema Marine Contractors; Peek, R, Shell International Exploration and Prod; Gresnigt, A M, Sluys, L J, Delft Univ of Tech, The Netherlands

Pipeline Laying Analysis Based on Substructure Method
Zhang, W S, Dalian Univ of Tech; Li, Z G, COOEC; Zhang, X F, Dalian Univ of Tech; Li, X, COOEC; Yue Q J, Dalian Univ of Tech, China

Saipem/ENI Offshore Pipeline Repair System (SiRCoS)
Spinelli, C M, ENI Gas & Power, Italy

The Latest Developments in Upheaval Buckling Analysis for Buried Pipelines
Wang, J, Ayman, E, Sun, J, Wang, S, Duan, D, Jukes, P, J P Kenny, USA

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