

CAMS 2013 PROGRAMME



17th -20th September 2013
Osaka University Nakanoshima Center, Osaka, Japan

CAMS 2013 9th IFAC Conference on Control Applications in Marine Systems Osaka, Japan, 17-20, September 2013 Tu. Schedule		
TUESDAY 17 September, 2013		
12:00	Registration (Saji Hall)	
13:00-13:30	OPENING CEREMONY (Saji Hall)	
13:30-14:30	Plenary Talk Tu.1 BIOINSPIRED ALGORITHMS FOR DISTRIBUTED CONTROL IN SMALL TEAMS OF AUTONOMOUS UNDERWATER VEHICLES Prof. Mandar Chitre Room: Saji Hall	
14:30-15:00	Coffee Break	
15:00 - 16:40	Session Tu.1A AUTONOMOUS SURFACE VEHICLES Room: 301	Session Tu.1B DYNAMIC POSITIONING Room: 304
17:00-19:30	Welcome Reception	

CAMS 2013 9th IFAC Conference on Control Applications in Marine Systems Osaka, Japan, 17-20, September 2013 We. Schedule		
WEDNESDAY 18 September, 2013		
8:50-9:50	Plenary Talk We.1 OBSERVATION OF DEEP SEA FLOOR BY AUTONOMOUS UNDERWATER VEHICLES Prof. Tamaki Ura Room: Saji Hall	
09:50-10:20	Coffee Break	
10:20 - 12:00	Session We.1A TRAJECTORY TRACKING AND PATH FOLLOWING 1 Room: 301	Session We.1B COLLISION AVOIDANCE Room: 304
12:00-13:00	Lunch Break	
13:00 - 15:00	Session We.2A TRAJECTORY TRACKING AND PATH FOLLOWING 2 Room: 301	Session We.2B PROPELLERS AND THRUSTERS Room: 304
15:00-15:30	Coffee Break	
15:30-16:30	Plenary Talk We.2 GREEN SHIP TECHNOLOGY IN JAPAN Mr. Masahiro Kishimoto Room: Saji Hall	
19:00-21:00	Gala Dinner (IPC Members)	

Note

<p align="center">CAMS 2013 9th IFAC Conference on Control Applications in Marine Systems Osaka, Japan, 17-20, September 2013</p> <p align="center">Th. Schedule</p>		
THURSDAY 19 September, 2013		
8:50-9:50	Plenary Talk Th.1 SAFETY MANAGEMENT IN THE APPLICATION OF MARITIME CONTROL SYSTEMS Prof. Chengi Kuo Room: Sanji Hall	
09:50-10:20	Coffee Break	
10:20 - 12:00	Session Th.1A SYSTEM IDENTIFICATION TECHNIQUES Room: 301	Session Th.1B SENSORS AND NAVIGATION SYSTEMS 1 Room: 304
12:00-13:00	Lunch Break	
13:00 - 15:00	Session Th.2A TRAJECTORY TRACKING, PATH FOLLOWING AND COOPERATIVE CONTROL Room: 301	Session Th.2B SENSORS AND NAVIGATION SYSTEMS 2 Room: 304
15:00-15:30	Coffee Break	
15:30-16:30	Plenary Talk Th.2 ENERGY-BASED CONTROL OF MARINE VEHICLE DYNAMICS Prof. Tristan Perez Room: Sanji Hall	
19:00-21:00	Conference Banquet (Rihga Royal Hotel Banquet Room)	

Note

<p style="text-align: center;">CAMS 2013 9th IFAC Conference on Control Applications in Marine Systems Osaka, Japan, 17-20, September 2013</p> <p style="text-align: center;">Fr. Schedule</p>		
FRIDAY 20 September, 2013		
8:50-9:50	Plenary Talk Fr.1 SEA TRIAL AND NUMERICAL SIMULATION OF MANEUVERING OF "NANIWA-MARU", A FULL-SCALE RECONSTRUCTION OF SAILING TRADER OF JAPANESE HERITAGE Emiritus Prof. Yutaka Masuyama Room: Saji Hall	
09:50-10:20	Coffee Break	
10:20 - 12:20	Session Fr.1A ENERGY RELATED AND ENVIRONMENTAL APPLICATIONS Room: 301	Session Fr.1B MODELING, SIMULATION AND CONTROL APPLICATIONS Room: 304
12:20-13:20	Lunch Break	
13:20-17:00	Group City Tours	
17:00-19:00	Farewell Reception	

Note

Tuesday, 17th September

12:00 – CONFERENCE REGISTRATION STARTS

13:00 – 13:30 OPENING CEREMONY – SAJI HALL

13:30 – 14:30 PLENARY TALK Tu.1 BIOINSPIRED AUVs

Chair: *Antonio M. Pascoal*

ROOM: SAJI HALL

BIOINSPIRED ALGORITHMS FOR DISTRIBUTED CONTROL IN
SMALL TEAMS OF AUTONOMOUS UNDERWATER VEHICLES
Prof. Mandar Chitre (National University of Singapore, Singapore)

14:30 – 15:00 Coffee break

15:00 - 16:40 [Tu.1A] AUTONOMOUS SURFACE VEHICLES

Chair: *Tristan Perez, Kazuhiko Hasegawa*

ROOM: 301

DESIGN OF A TWIN HULL BASED USV WITH ENHANCED
MANEUVERABILITY

Michael Blaich , Stefan Wirtensohn , Markus Oswald , Oliver
Hamburger , Johannes Reuter (University of Applied Sciences Konstanz,
Germany)*

QUANTIZED-STATE CONTROL OF A HOVERCRAFT WITH
DISCRETE INPUTS

Dictino Chaos , Rocío Muñoz-Mansilla , David Moreno-Salinas,
Joaquin Aranda (UNED, Spain)*

CONSTRUCTION OF GUIDANCE AND CONTROL SYSTEM AND
 GUI OF AN AUTONOMOUS UNDERWATER ROBOT: SOTAB-I
*Ryota Kimura**, *Masahiro Ukita*, *Keiko Kamezuka*, *Naomi Kato*,
Hidetaka Senga, *Hiroyoshi Suzuki*, *Mahdi Choyekh* (*Osaka University*,
Japan)

CONTROL ALGORITHMS FOR A SAILBOAT ROBOT WITH A
 SEA EXPERIMENT
*Benoit Clement** (*ENSTA Bretagne, France*)

IMPLEMENTATION OF AUTOMATIC SHIP BERTHING USING
 ARTIFICIAL NEURAL NETWORK FOR FREE RUNNING
 EXPERIMENT
*Yaseen Adnan Ahmed**, *Kazuhiko Hasegawa* (*Osaka University, Japan*)

15:00 - 16:40 [Tu.1B] DYNAMIC POSITIONING

Chair: *Evgeny Veremey*, *Vahid Hassani*

ROOM: 304

DYNAMICAL CORRECTION OF POSITIONING CONTROL LAWS
*Evgeny Veremey** (*Saint-Petersburg State University, Russia*)

DYNAMIC POSITIONING BASED ON NONLINEAR MPC
*Margarita Sotnikova**, *Evgeny Veremey* (*Saint-Petersburg State*
University, Russia)

FUEL OPTIMAL THRUST ALLOCATION IN DYNAMIC
 POSITIONING
*Martin Rindarøy**, *Tor Arne Johansen* (*Norwegian University of*
Science and Technology, Norway)

RECURSIVE NULLSPACE-BASED CONTROL ALLOCATION
 WITH STRICT PRIORITIZATION FOR MARINE CRAFT
Roger Skjetne, *Øivind Kåre Kjerstad** (*Norwegian University of Science*
and Technology, Norway)

EXPERIMENTAL RESULTS OF DISCRETE TIME VARIABLE
STRUCTURE CONTROL FOR DYNAMIC POSITIONING OF
MARINE SURFACE VESSELS

*Paolo Raspa, Flavia Benetazz, Sauro Longhi , Gianluca Ippoliti (Università
Politecnica delle Marche, Italy), Asgeir Sørensen (Norwegian University of
Science and Technology, Norway)*

17:00 – 19:30 WELCOME RECEPTION

Wednesday, 18th September

8:50- 9:50 PLENARY TALK We.1 OBSERVATION OF DEEP SEA FLOOR

Chair: *Tristan Perez*

ROOM: SAJI HALL

OBSERVATION OF DEEP SEA FLOOR BY AUTONOMOUS UNDERWATER VEHICLES

Prof. Tamaki Ura (Kyushu Institute of Technology, Japan)

9:50 - 10:20 Coffee break

10:20 - 12:00 [We.1A] TRAJECTORY-TRACKING AND PATH FOLLOWING 1

Chair: *Thor I. Fossen, Hiroyuki Kajiwara*

ROOM: 301

NONLINEAR TIME SERIES MODEL FOR SHIP TRACKING CONTROL

Jun Wu, Hui Peng (Central South University, China),*

Kohei Ohtsu (Tokyo University of Marine Science and Technology Japan),

Genshiro Kitagawa (Institute of Statistical Mathematics, Japan),

Hiroyuki Oda (Akishima Laboratories (Mitsui Zosen) Inc., Japan)

DESIGN AND EVALUATION OF SIMPLE SHIP'S AUTOMATIC MANEUVERING SYSTEM USING SLIDING MODE CONTROLLER

Naoki Mizuno, Satoru Matsumoto (Nagoya Inst. of Technology, Japan)*

SPEED CONSTRAINTS HANDLING IN USV SWARM PATH-FOLLOWING FRAMEWORKS

*Marco Bibuli**, *Gabriele Bruzzone*, *Massimo Caccia (CNR-ISSIA, Italy)*,
Andrea Gasparri, *Attilio Priolo (University of Roma Tre, Italy)*,
Enrica Zereik (CNR-ISSIA, Italy)

SPEED-VARYING PATH FOLLOWING FOR UNDERACTUATED MARINE CRAFT

Ehsan Peymani, *Thor I. Fossen** (*Norwegian University of Science and Technology, Norway*)

PATH FOLLOWING OF UNDERACTUATED SURFACE VESSELS IN PRESENCE OF UNKNOWN CONSTANT ENVIRONMENTAL FORCES: PRELIMINARY RESULTS

*Walter Caharija**, *Kristin Y. Pettersen*, *Jan Tommy Gravdahl (Norwegian University of Science and Technology, Norway)*

10:20 - 12:00 [We.1B] COLLISION AVOIDANCE

Chair: Kazuhiko Hasegawa, Axel Hahn

ROOM: 304

NEW COLLISION ALARM ALGORITHM USING OBSTACLE ZONE BY TARGET (OZT)

Junji Fukuto(NMRI, Japan)*, *Hayama Imazu (Tokyo University of Marine Science and Technology Japan)*

A USER TEST OF AUTOMATIC NAVIGATIONAL INTENTION EXCHANGE SUPPORT SYSTEM USING AN INTELLIGENT SHIP-HANDLING SIMULATOR

*Rina Miyake**, *Junji Fukuto*, *Yasuyuki Niwa (NMRI, Japan)*,
Makiko Minami (Japan Transport Safety Board, Japan)

TOWARDS MARINE COLLISION AVOIDANCE BASED ON AUTOMATIC ROUTE EXCHANGE

Sascha Hornauer, *Axel Hahn**, (*Carl von Ossietzky Universität Oldenburg, Germany*)

SHIP OVERRIDE CONTROL FOR UNCOORDINATED ANTI-COLLISION ACTION USING TRIAL MANOEUVRE
 Yongqiang Zhuo* (*Guangdong Ocean University, China*),
 Kazuhiko Hasegawa (*Osaka University, Japan*)

12:00 – 13:00 Lunch

13:00 - 15:00 [We.2A] TRJECTORY-TRACKING AND PATH FOLLOWING 2

Chair: *Massimo Caccia, Shinya Nakamura*

ROOM: 301

JACOBIAN TASK PRIORITY-BASED APPROACH FOR PATH FOLLOWING OF UNMANNED SURFACE VEHICLES59
*Enrica Zereik, Marco Bibuli, Gabriele Bruzzone, Massimo Caccia** (*CNR-ISSIA, Italy*)

PATH FOLLOWING OF MARINE SURFACE VESSELS USING BOW AND AFT RUDDERS IN WAVE FIELDS
Peiyuan Feng(*Shanghai Jiao Tong University, China*),
*Jing Sun**(*Univ of Michigan, USA*), *Ning Ma* (*Shanghai Jiao Tong University, China*)

EXPERIMENT ON TRACK-KEEPING PERFORMANCE USING A FREE RUNNING MODEL SHIP
Namkyun Im (*Mokpo National Maritime University, Korea*),
Van-Luong Tran (*Vietnam Maritime University, Vietnam*),
*Thanh-Dat Le** (*Mokpo National Maritime University, Korea*)

CONTINUOUS CURVATURE PATH PLANNING USING VORONOI DIAGRAMS AND FERMAT'S SPIRALS
*Mauro Candeloro, Anastasios Lekkas, Asgeir Sørensen, Thor I. Fossen** (*Norwegian University of Science and Technology, Norway*)

METHODOLOGY OF VESSEL'S ROUTE PROGRAM MOTION ON
THE BASIS OF SIGMA FUNCTION

Alexandr Mironenko (Admiral Ushakov State Maritime University,
Russia)*

FULL-STATE MANOEUVRE PLANNING SYSTEM FOR MARINE
VEHICLES

Martin Kurowski (University of Rostock, Germany), Oliver Köckritz ,
Holger Korte (Jade - University of Applied Sciences, Germany)*

13:00 - 15:00 [We.2B] PROPELLERS AND THRUSTERS

Chair: *Mogens Blanke, Yasuyuki Toda*

ROOM: 304

UNMANNED WATER CRAFT IDENTIFICATION AND
ADAPTIVE CONTROL IN LOW-SPEED AND REVERSING
REGIONS

Lukas Roy Svane Theisen, Roberto Galeazzi, Mogens Blanke (Technical
University of Denmark, Denmark)*

UNIT COMMITMENT OF GENERATOR SETS DURING
DYNAMIC POSITIONING OPERATION BASED ON
CONSEQUENCE SIMULATION

Torstein Ingebrigtsen Bø, Tor Arne Johansen (Norwegian University of
Science and Technology, Norway), Eirik Mathiesen (Kongsberg Maritime,
Norway)*

FOUR-QUADRANT PROPELLER MODELING: A LOW-ORDER
HARMONIC APPROXIMATION

*Andreas Johannes Häusler (Instituto Superior Técnico, Portugal),
Alessandro Saccon (Eindhoven University of Technology, Netherlands),
John Hauser (Univ. of Colorado, USA),
Antonio M. Pascoal* (ISR-Inst. Superior Técnico, Portugal),
A. Pedro Aguiar (Faculty of Engineering, University of Porto, Portugal)*

PERFORMANCE EVALUATION OF AN UNDERWATER
VEHICLE EQUIPPED WITH A COLLECTIVE AND CYCLIC PITCH
PROPELLER

Hung Duc Nguyen, Poowadol Niyomka, Neil Bose, Jonathan Binns
(University of Tasmania / Australian Maritime College, Australia)*

INFLUENCE OF PROPULSION SYSTEM CONFIGURATION ON
THE MANOEUVRING PERFORMANCES OF A SURFACE TWIN-
SCREW SHIP

Salvatore Mauro (CNR-INSEAN, Italy)

EXPERIMENTS TO DETERMINE THRUSTER DESIGN
PARAMETERS OF A MOORED FLOATING PLATFORM

Sajjan SC, Surendran Sankunni (Indian Institute of Technology Madras,
India), Seung Keon Lee (Pusan National University, Korea)*

15:00 – 15:30 Coffee break

15:30 - 16:30 PLENARY TALK We.2 GREEN SHIP TECHNOLOGY

Chair: Yasuyuki Toda

ROOM: SAJI HALL

GREEN SHIP TECHNOLOGY IN JAPAN

*Mr. Masahiro Kishimoto (Director of EEDI Project Team, National
Maritime Research Institute, Japan)*

19:00 – 21:00 GALA DINNER (IPC Members)

Thursday, 19th September**8:50 – 9:50 PLENARY TALK Th.1 SAFETY MANAGEMENT****Chair: Kazuhiko Hasegawa****ROOM: SAJI HALL**SAFETY MANAGEMENT IN THE APPLICATION OF MARITIME
CONTROL SYSTEMS*Prof. Chengi Kuo (University of Strathclyde, UK)*

9:50 – 10:20 Coffee break

10:20 - 12:00 [Th.1A] SYSTEM IDENTIFICATION TECHNIQUES**Chair: Hiroyuki Oda, Vahid Hassani****ROOM: 301**ANALYSIS OF IDENTIFICATION METHODS APPLIED TO FREE
MODEL TESTS OF THE PIRAJUBA AUV*João Lucas Dozzi Dantas, William da Silva Caetano (Polytechnic School of
University of São Paulo, Brazil), Ettore de Barros (University of Sao Paulo,
Brazil)*NEURAL NETWORK IDENTIFICATION OF MARINE SHIP
DYNAMICS*Dmitry A. Os'kin, Alexander Dyda*, Vasily Markin (Maritime State
University, Russia)*EVALUATION OF METHODS TO ESTIMATE HYDRODYNAMIC
FORCE COEFFICIENTS OF UNDERWATER VEHICLE BASED ON
CFD*Hiroyoshi Suzuki* (Osaka University, Japan), Hiroshi Yoshida, Tomoya
Inoue, Yoshitaka Watanabe (JAMSTEC, Japan), Junki Sakaguchi (DENSO,
Japan)*

ADAPTIVE WAVE FILTERING FOR DYNAMIC POSITIONING OF
MARINE VESSELS USING MAXIMUM LIKELIHOOD
IDENTIFICATION: THEORY AND EXPERIMENTS

Vahid Hassani (Inst. Superior Tecnico, Portugal), Asgeir Sørensen
(Norwegian University of Science and Technology, Norway),
Antonio M. Pascoal (ISR-Inst. Superior Tecnico, Portugal)*

A K-EXPONENTIAL STABLE NONLINEAR OBSERVER FOR THE
WAVE ENCOUNTER FREQUENCY

*Dennis Belleter (Eindhoven University of Technology, Netherlands),
Dominik Breu*, Thor I. Fossen (Norwegian University of Science and
Technology, Norway), Hendrik Nijmeijer (Eindhoven University of
Technology, Netherlands)*

10:20 - 12:00 [Th.1B] SENSORS AND NAVIGATION SYSTEMS 1

Chair: *Fuyuki Hane , Francisco Teixeira*

ROOM: 304

OPTIMAL SENSOR PLACEMENT FOR ACOUSTIC RANGE-
BASED UNDERWATER ROBOT POSITIONING

Thomas Glotzbach (Ilmenau University of Technology, Germany),
David Moreno-Salinas (UNED, Spain), Antonio M. Pascoal (ISR-Inst.
Superior Tecnico, Portugal), Joaquin Aranda (Universidad Nacional de
Educación a Distancia, Spain)*

ROV NAVIGATION WITH MECHANICALLY SCANNED SONAR
AND INERTIAL SENSORS

Rodrigo Telles da Silva Vale, Ettore de Barros, Thiago de Castro Martins
(University of Sao Paulo, Brazil)*

OBSERVABILITY ANALYSIS OF 2D SINGLE-BEACON
NAVIGATION IN THE PRESENCE OF CONSTANT
CURRENTS FOR TWO CLASSES OF MANEUVERS

Naveen Crasta (TU Ilmenau, Germany), Mohammadreza Bayat
(Technical University of Lisbon, Portugal), A. Pedro Aguiar
(University of Porto, Portugal),
Antonio M. Pascoal (ISR-Inst. Superior Tecnico, Portugal)*

UNDERWATER TARGET POSITIONING WITH A SINGLE
ACOUSTIC SENSOR

David Moreno-Salinas (UNED, Spain), Antonio M. Pascoal (ISR-Inst. Superior Tecnico, Portugal), Joaquin Aranda (UNED, Spain)*

MAGNETIC NAVIGATION AND TARGET TRACKING OF
UNDERWATER VEHICLES

Francisco Teixeira (University of Aveiro, Portugal), Antonio M. Pascoal (ISR-Inst. Superior Tecnico, Portugal)*

12:00 – 13:00 Lunch

**13:00 - 15:00 [Th.2A] TRAJECTORY TRACKING, PATH
FOLLOWING AND COOPERATIVE
CONTROL**

Chair: Antonio M. Pascoal, Junji Fukuto

ROOM: 301

A QUATERNION-BASED LOS GUIDANCE SCHEME FOR PATH
FOLLOWING OF AUVS

Anastasios Lekkas, Thor I. Fossen (Norwegian University of Science and Technology, Norway)*

TRAJECTORY TRACKING MOTION CONTROL SYSTEM FOR
OBSERVATION CLASS ROVS

Daniel de Almeida Fernandes, Asgeir Sørensen (Norwegian University of Science and Technology, Norway), Decio Crisol Donha (Universidade de Sao Paulo, Brazil)*

ADAPTIVE VSS CONTROL WITH DEFORMABLE SLIDING
SURFACES FOR UNDERWATER ROBOT MANIPULATOR
DRIVES

Vasily Markin, Alexander Dyda, Dmitry A. Os'kin (Maritime State University, Russia)*

A PACKET LOSS COMPLIANT LOGIC-BASED
COMMUNICATION ALGORITHM FOR COOPERATIVE PATH-
FOLLOWING CONTROL

Francisco Rego (ISR/IST, Portugal), A. Pedro Aguiar (University of Porto, Portugal), Antonio M. Pascoal (ISR-Inst. Superior Tecnico, Portugal)*

COOPERATIVE CONTROL APPLIED TO DP SYSTEMS -
NUMERICAL ANALYSIS

Asdrubal do Nascimento Queiroz Filho, Eduardo Aoun Tannuri
(University of Sao Paulo, Brazil)*

OBSERVER-LAGRANGE MULTIPLIER-BASED CONTROLLER
APPLIED TO TWO DYNAMICALLY CONTROLLED VESSELS

Lázaro Jr. Moratelli, Rafael Ramos Marangoni, Helio Mitio Morishita,
Rodrigo Santos Martinez (University of Sao Paulo, Brazil)*

13:00 - 15:00 [Th.2B] SENSORS AND NAVIGATION SYSTEMS 2**Chair: *Pere Ridao, Ikuo Yamamoto*****ROOM: 304**

INTEGRATION FILTER FOR APS, DVL, IMU AND PRESSURE
GAUGE FOR UNDERWATER VEHICLES

Fredrik Dukan, Asgeir Sørensen (Norwegian University of Science and
Technology, Norway)*

A COMPARISON OF G2O GRAPH SLAM AND EKF POSE BASED
SLAM WITH BATHYMETRY GRIDS

Albert Palomer, Pere Ridao, David Ribas, Angelos Maillos,
Guillem Vallicrosa (University of Girona, Spain)*

PRELIMINARY RESULTS ON THE ACTIVE POSE ESTIMATION
OF UNDERWATER VEHICLES FROM RANGE MEASUREMENTS

Gianfranco Parlangei, Giovanni Indiveri (University of Salento, Italy)

HEAVE MOTION ESTIMATION ON A CRAFT USING A
STRAPDOWN INERTIAL MEASUREMENT UNIT

Øyvind F. Auestad, Jan Tommy Gravdahl, Thor I. Fossen (Norwegian
University of Science and Technology, Norway)*

MONITORING OF SEAWEED BED BY A SURFACE PIERCING
AUTONOMOUS UNDERWATER VEHICLE WITH A SIDESCAN
SONAR

Naomi Kato, Yoshiyuki Shoji, Hidetaka Senga (Osaka University, Japan)*

REAL-TIME 3D RECONSTRUCTION OF UNDERWATER SEA-ICE
TOPOGRAPHY BY OBSERVATIONS FROM A MOBILE ROBOT IN
THE ARCTIC

Ulrik Jørgensen, Roger Skjetne (Norwegian University of Science and
Technology, Norway)*

15:00 - 15:30 Coffee break

15:30 - 16:30 PLENARY TALK TH.2 ENERGY-BASED CONTROL

Chair: *Thor I. Fossen*

ROOM: SAJI HALL

ENERGY-BASED CONTROL OF MARINE VEHICLE DYNAMICS

Prof. Tristan Perez (The University of Newcastle, Australia)

19:00 – 21:00 CONFERENCE BANQUET (Rihga Royal Hotel)

Friday, 20th September

8:50 – 9:50 PLENARY TALK Fr.1 SEA TRIAL OF JAPANESE HERITAGE SAILING TRADDER

Chair: *Kazuhiko Hasegawa*

ROOM: SAJI HALL

SEA TRIAL AND NUMERICAL SIMULATION OF
MANEUVERING OF “NANIWA-MARU”, A FULL-SCALE
RECONSTRUCTION OF SAILING TRADER OF JAPANESE
HERITAGE

*Emiritus Prof. Yutaka Masuyama (Kanazawa Institute of Technology,
Japan)*

9:50 – 10:20 Coffee break

10:20 - 12:20 [Fr.1A] ENERGY RELATED AND ENVIRONMENTAL APPLICATIONS

Chair: *Naomi Kato, Mogens Blanke*

ROOM: 301

ENERGY-BASED NONLINEAR CONTROL OF SHIP ROLL GYRO-
STABILISER WITH PRECESSION ANGLE CONSTRAINTS

Alejandro Donaire, Tristan Perez (The University of Newcastle,
Australia)*

ADVANCED STATISTICAL ANALYSIS WITH GUARANTEED
ESTIMATION OF CURRENT PERFORMANCE FOR SAMPLED-
DATA SYSTEMS WITH DELAY AND GENERALIZED HIGHER
ORDER HOLD

*Vladislav Rybinskii (SMTU, Russia), Efim N. Rosenwasser (Marine
Technical Univ of Saint Petersburg, Russia), Bernhard P. Lampe*
(University of Rostock, Germany)*

MODELLING FOR CONTROL OF EXHAUST GAS
RECIRCULATION ON LARGE DIESEL ENGINES

*Jakob Mahler Hansen** (Technical University of Denmark, Denmark),
Claes-Göran Zander (MAN Diesel & Turbo, Denmark), *Nicolai Pedersen*,
Mogens Blanke (Technical University of Denmark, Denmark),
Morten Vejlggaard-Laursen (MAN Diesel & Turbo, Denmark)

EXHAUST GAS RECIRCULATION CONTROL FOR LARGE
DIESEL ENGINES - ACHIEVABLE PERFORMANCE WITH SISO
DESIGN

*Jakob Mahler Hansen**, *Mogens Blanke*, *Henrik Niemann*, (Technical
University of Denmark, Denmark), *Morten Vejlggaard-Laursen* (MAN
Diesel & Turbo, Denmark)

ABOUT SIMULATION MODEL OF MARINE ECOSYSTEMS (ON
EXAMPLE OF OKHOTSK SEA)

*Ferdinant Mkrtchyan**, *Viktor Kapiton* (Inst. Radioengineering and
Electronics, Russia)

AN ALGORITHM FOR AUTOMATIC ACOUSTIC DETECTION OF
SHIP AND MARINE MAMMALS

*Akiko Sakurada** (Osaka University, Japan), *Tomonari Akamatsu*
(National Research Institute of Fisheries Engineering, Fisheries Research
Agency, Japan), *Naoya Umeda* (Osaka University, Japan)

**10:20 - 12:20 [Fr.1B] MODELING, SIMULATION AND
CONTROL APPLICATIONS**

Chair: *Bernhard P. Lampe*, *Hiroyuki Oda*

ROOM: 304

ACTUATOR FAULT DETECTION SYSTEM FOR A REMOTELY
OPERATED VEHICLE

Alessandro Freddi, *Sauro Longhi*, *Andrea Monteriù** (Università
Politecnica delle Marche, Italy)

TOWARDS AN IMPLEMENTATION FOR OFFSHORE
OPERATION SIMULATIONS

Jan Richter, Holger Korte (Jade - University of Applied Sciences,
Germany)*

RISK ASSESSMENT OF HUMAN MACHINE INTERACTION FOR
CONTROL AND NAVIGATION SYSTEMS OF MARINE VESSELS

Axel Hahn (Carl von Ossietzky Universität Oldenburg, Germany)*

VIV ANALYSIS OF A CANTILEVERED PIPE DISCHARGING
FLUID WITH A NOZZLE AT SEA

Shuai Meng, Hiroyuki Kajiwara (Kyushu University, Japan)*

MODELLING OF DRAG FORCES ON A CLOSED FLEXIBLE FISH
CAGE

Ida Marlen Strand, Asgeir Sørensen (Norwegian University of Science
and Technology, Norway), Paal Lader, Zsolt Volent (SINTEF Fisheries
and Aquaculture, Norway)*

LAUNCH OF ROBOTIC FISH TO THE SPACE: DEVELOPMENT
OF AUTONOMOUS CLEANING ROBOT IN THE
INTERNATIONAL SPACE STATION

Masahiko Mizui (Kyushu Kyouritu University, Japan), Ikuo Yamamoto
(Nagasaki University), Taishi Oka (The University of Kitakyushu, Japan)*

12:20 – 1320 Lunch

13:20 – 1700 GROUP CITY TOURS

17:00 – 1900 FAREWELL RECEPTION