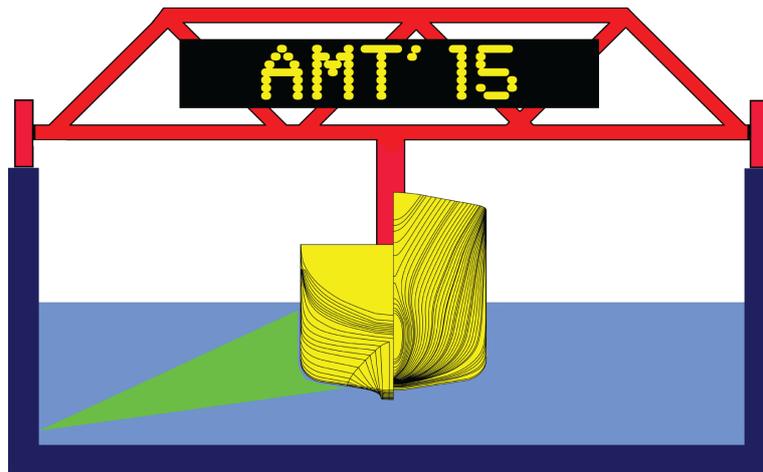


The 4th International Conference on Advanced Model Measurement Technology for the Maritime Industry (AMT'15)



28th – 30th September 2015, Istanbul, Turkey.

AMT'15 is organized by the Hydro-Testing Forum (HTF) members and will be jointly hosted by Newcastle University & Istanbul Technical University.

Final Draft Programme



SNAME WESTERN EUROPE SECTION

AMT'15

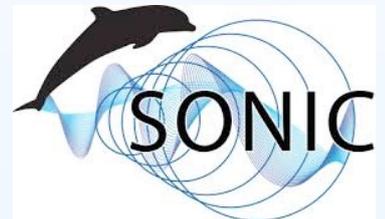
The 4th International Conference on Advanced Model Measurement Technology for the Maritime Industry

AMT'15 (*Advanced Model Measurement Technology for the Maritime Industry*) is a 3 day international conference with 50 presentations on contemporary experimentation topics in the marine environment. The topics include: PIV and other optical measurement applications; underwater noise measurements; coating performance and drag reduction measurements; various sensors and control applications; pod propulsor measurements; cavitation erosion; smart free running and other tank test applications as well as experimental uncertainty analysis techniques.

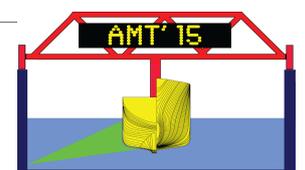
The conference will endorse the newly established Hydro-Testing Forum (HTF) as the longer lasting continuation of the FP6–Hydro Testing Alliance (HTA) Network of Excellence which was successfully completed by the end of 2011. There will be a specific emphasis on the topic of underwater noise measurements as response to recently increased awareness as well as on antifouling coatings and the energy efficiency of ships.

The AMT'15 provides a platform for networking between the conference participants and members of HTF who initiated this conference which is jointly organised and hosted by Newcastle University, UK & Istanbul Technical University, Turkey.

“The AMT'15 conference represents an opportunity for industry and test facilities, for researchers and academics to learn more about Europe's experimental research capabilities for maritime constructions...”



This project is supported by the HydroTesting Forum (HTF)



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Introducing the AMT'15 conference, Istanbul, Turkey

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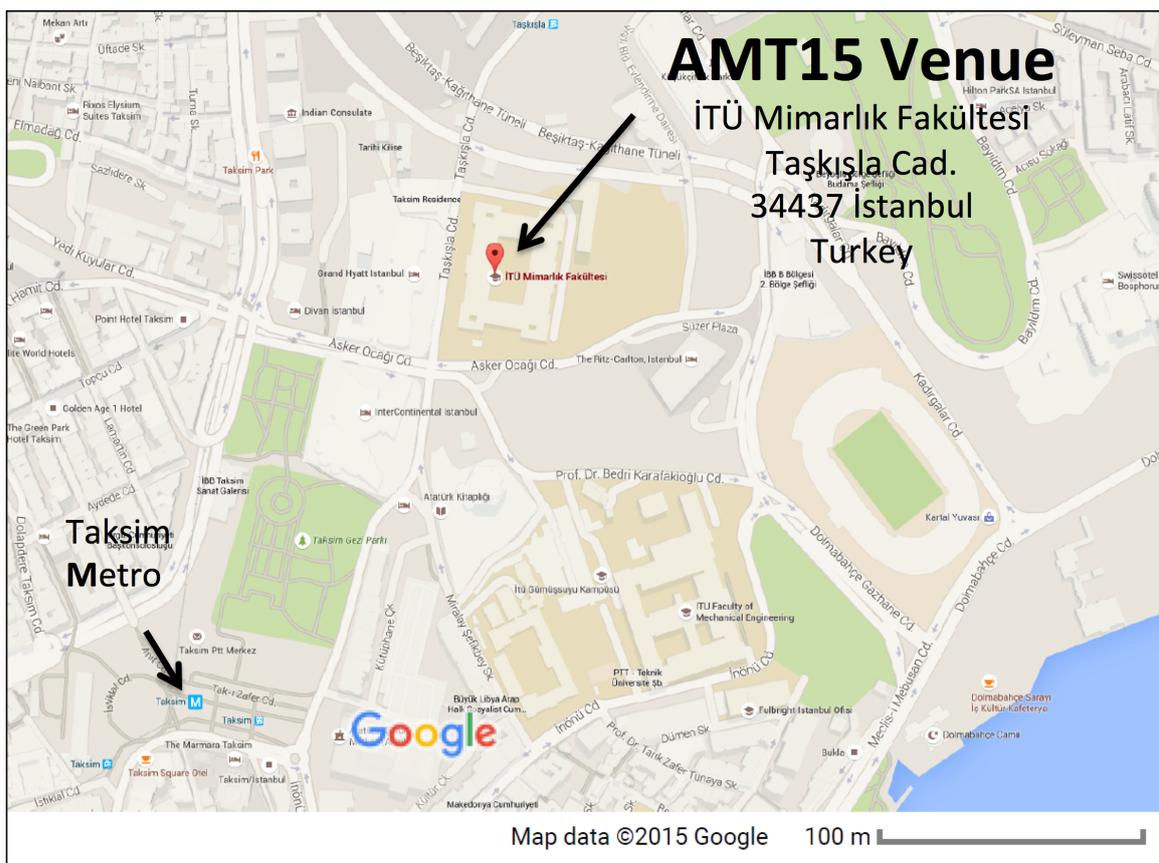
Conference Programme

The conference program for both rooms

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Date & Venue

The 4th International Conference on Advanced Model Measurement Technology For the Maritime Industry will be held from the 28th to the 30th of September 2015 on the Taskisla campus of Istanbul Technical University in Turkey.



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Preface

This booklet contains the *Conference Programme* and *Abstracts* of the papers to be presented in AMT'15 conference (*Advanced Model Measurement Technology for the Maritime Industry*), it can also be downloaded from the conference website at <http://conferences.ncl.ac.uk>.

The 1st, 2nd and 3rd of the AMT conference series (AMT'09, AMT'11 and AMT'13) were held at Nantes in 2009, Newcastle upon Tyne in 2011, and Gdansk in 2013, respectively, as part of the external dissemination of the Hydro Testing Alliance (HTA) Network of Excellence (NoE) which was sponsored under the umbrella of the 6th EU Framework Programme (FP) and the HydroTesting forum (HTF).

All of the AMT conferences were excellent platforms to introduce the activities of HTA and HTF to the conference delegates outside the NoE and to share the HTA and HTF knowledge gained in the field of model measurement technologies in marine environment. All the AMT conference proceedings are freely accessible in the official site of the Hydro Testing Forum website <http://www.hta-forum.eu/>

The five year period for HTA-NoE was successfully ended in September 2011 by leaving the AMT Conference Series as its legacy. In the meantime one of the main objectives of HTA project was that the HTA-NoE should become a formal and long lasting forum beyond September 2011. This would in turn sustain the continuation of the AMT conference series. We are pleased to inform you that HTA phased in 2012 from a Network of Excellence (NoE) to a longer lasting "*Hydro Testing Forum*" (HTF) to sustain its activities.

In HTF maritime research institutes, measurement equipment providers and universities share their experiences in measurement technologies. Experts of the members meet in forum events through workshops on specific subjects and plenary discussions on new ideas and achievements.

The vision of HTF is to achieve reliable and validated hydro-testing services with advanced measurement techniques for the maritime technologies. The mission of HTF is to be a formal and lasting international network to coordinate the definition and introduction of novel measurement, observation and analysis technologies for hydrodynamic model testing environment. Any interesting topic can be agreed as *Community of Practice (CoP)* and investigated by interested HTF members based on the agreement.

Membership of the HTF network is open to hydro-testing organisations, universities, measurement systems providers and end-users. To become a member of the HTF network a membership agreement has to be signed.

In addition to the usual HTF dissemination activities, on this occasion, HTF has decided to foster the student activities in the model measurement technology field and hence offered AMT15 to be their international platform in collaboration with SNAME West European Section; we hope this initiative will grow stronger through future events.

Similar to the previous proceedings the AMT'15 Conference Proceedings will be freely available at the HTF website.

We wish you a very fruitful conference and a delightful stay in Istanbul.

AMT'15 Conference Chair

Prof. Mehmet Atlar (Newcastle University)
Prof. Emin Korkut (Istanbul Technical University)

HTF Co-ordinator

Albert Aalbers (MARIN)



SNAME WESTERN EUROPE SECTION

The AMT'15 Local Organising Committee

Prof Mehmet Atlar
Newcastle University, UK
Mehmet.Atlar@ncl.ac.uk

+44 191 222 8977

+44 790 089 0228

Prof Emin Korkut
Istanbul Technical University
korkutem@itu.edu.tr

+90 212 285 6413

+90 537 388 6568

Ms Sheree Ibbetson
Newcastle University, UK
Sheree.ibbetson@ncl.ac.uk

+44 191 222 7184

+44 751 155 9111

Mr Batuhan Aktas
Newcastle University, UK
b.aktas@newcastle.ac.uk

+44 191 222 5067

+44 777 614 7626

Mr Weichao Shi
Newcastle University, UK
w.shi6@newcastle.ac.uk

+44 191 222 5067

+44 745 428 1918

Conference Programme

Conference Programme

Day 1		28th September
8:00-9:00	Registry and Coffee	
9:00-9:30	Opening Ceremony	
9:30-10:15	Plenary session - Modelling the performance of antifouling coatings Dr. Jeremy C. Thomason Ecotecnica SCP, Mexico	
10:15-11:00	Refreshments	
PIV Applications		Session A1
11:00-11:25	STEREO PARTICLE IMAGE VELOCIMETRY AROUND ISOLATED VORTEX CAVITATION P. Pennings, R. Delfos, J. Westerweel & T. van Terwisga Delft University of Technology	
11:25-11:50	EXPERIMENTAL INVESTIGATION ON CIRCULAR AND NON-CIRCULAR SYNTHETIC JETS ISSUING FROM SHARP EDGE ORIFICES A. Hashiehbafe & G. P. Romano La Sapienza University, Italy	
11:50-12.15	PARTICLE IMAGE VELOCIMETRY IN A MOONPOOL R. Hallmann & K. Kooiker Maritime Research Institute Netherlands (MARIN), Netherlands	
12:15-14:00	Lunch	
Optical Measurements & Imaging Techniques		Session A2
14:00-14:25	BUBBLES AND MICROBUBBLES FOR HYDRODYNAMIC LABORATORY APPLICATIONS Y. Lecoffre ¹ , G. Maj ² , V. Aumelas ² ¹ HYDEO, France, ² YLEC Consultants, France	
14:25-14:50	MICROBUBBLES SEEDING FOR FLOW CHARACTERIZATION V. Aumelas ¹ , G. Maj ¹ , J.P. Franc ² & Y. Lecoffre ³ ¹ YLEC Consultants, France, ² LEGI, France, ³ HYDEO, France	
14:50-15:15	DYNAMIC TRAJECTORY MEASUREMENT OF A STRAINED CABLE EXCITED BY MEAN FLOW BY HIGH SPEED IMAGING SYSTEM R. Boucheron, D. Fréchou & L. Briançon DGA Hydrodynamics, France	
15:15-16:00	Refreshments	

Conference Programme

Day 1		28th September
8:00-9:00	Registry and Coffee	
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9:30-10:15	Plenary session - Modelling the performance of antifouling coatings Dr. Jeremy C. Thomason Ecoteknica SCP, Mexico	
10:15-11:00	Refreshments	
Noise facilities / Measurement techniques		Session B1
11:00-11:25	ACOUSTIC REVERBERATION MEASUREMENTS IN THE DEPRESSURIZED WAVE BASIN F.H. Lafeber ¹ , J. Bosschers ¹ , C.A.F. de Jong ² & F. Graafland ² ¹ MARIN, The Netherlands, ² TNO, The Netherlands	
11:25-11:50	EVALUATION OF METHODS TO MEASURE ACOUSTIC TRANSFER FUNCTIONS IN CAVITATION TUNNELS G.Tani ¹ , M.Viviani ¹ , T. Gaggero ¹ , J. Hallander ² , T. Johansson ² ¹ University of Genoa, Italy, ² SSPA Sweden AB,	
11:50-12.15	NOVEL EXPERIMENTAL APPROACHES FOR NOISE SOURCE DIAGNOSTICS IN NAVAL AND MARINE APPLICATIONS M. Felli, M. Falchi, G. Dubbioso CNR-INSEAN, Italy	
12:15-14:00	Lunch	
Noise measurements / Predictions / Validations		Session B2
14:00-14:25	PROPELLER CAVITATION NOISE MODEL TEST IN KRISO LARGE CAVITATION TUNNEL & ITS COMPARISON WITH FULL-SCALE RESULTS H. Seol, B-G Paik, Y-H Park, K-Y Kim, J-W Ahn, C Park, G-D Kim, & K-S Kim Korea Research Institute of Ships & Ocean Engineering (KRISO), Korea	
14:25-14:50	UNDERWATER RADIATED NOISE MEASUREMENTS ON A CHEMICAL TANKER - COMPARISON OF FULL-SCALE AND MODEL-SCALE RESULTS J. Hallander & T. Johansson SSPA, Sweden	
14:50-15:15	PROPELLER INVESTIGATIONS BY MEANS OF NUMERICAL SIMULATION J. Felicjancik ^{1,2} ¹ Ship Design and Research Centre (CTO), Poland, ² Gdansk University of Technology, Poland	
15:15-16:00	Refreshments	

Conference Programme

Propulsion Test Techniques / Uncertainty		Session A3
16:00–16:25	DETERMINISTIC STATISTICAL PROPERTIES OF QUASI-STEADY MEASURED SIGNALS J. Brouwer, J. Tucker, J.Dang, F-H Lafeber MARIN, The Netherlands	
16:25-16:50	VALIDATION OF QUASI-STEADY MODEL PROPULSION TESTS M.A. Verhulst MARIN, The Netherlands	
16:50-17:15	EXPERIMENTAL INVESTIGATION OF ROUGHNESS EFFECT ON THE RESISTANCE AND SELF-PROPULSION OF A SHIP MODEL D. E. Liarokapis, V.K. Papakonstantinou, G. P. Passas, J. P. Trachanas & G. D. Tzabiras National Technical University of Athens, Greece	
17:30 - 19:00	Cocktails	
19:00 - 19:45	Piano Recital	

Conference Programme

Noise Measurements in full scale		Session B3
16:00-16:25	ON-BOARD MEASUREMENT TECHNIQUES TO QUANTIFY UNDERWATER RADIATED NOISE LEVEL S. Turkmen, B. Aktas, M. Atlar, R. Sampson, W. Shi & P. Fitzsimmons Newcastle University, U.K.	
16:25-16:50	ON BOARD STRUCTURE BORNE NOISE MEASUREMENTS AND UNDERWATER RADIATED NOISE P. Zoet ¹ , S. Turkmen ² , P. Kellett ¹ , B. Aktas ² , R. Sampson ² , W. Shi ² , M. Atlar ² & O. Turan ¹ ¹ The University of Strathclyde, U.K., ² Newcastle University, U.K.	
16:50:17:15	AN EXPERIMENTAL APPROACH TO MEASURE PROPELLER CAVITATION NOISE ASSESSMENT ON-BOARD A RESEARCH VESSEL S. Leivadaros, B. Aktas, M. Atlar, P. Fitzsimmons & N. Sasaki Newcastle University, U.K.	
17:30-19:00	Cocktails	
19:00-19:45	Piano Recital	

Conference Programme

Day 2		29th September 2015
8:00-9:00	Registry and Coffee	
Frictional Drag Measurements		Session A4
9:00-9:25	<p align="center">SKIN FRICTION LOCAL MEASUREMENTS AT HIGH REYNOLDS NUMBER AT DGA HYDRODYNAMICS</p> <p align="center">O. Perelman, J. Vermare, M. Darquier, P. Perdon DGA Hydrodynamics, France</p>	
9:25-9:50	<p align="center">MEASUREMENTS OF ADDED RESISTANCE DUE TO INCREASED ROUGHNESS ON FLAT PLATES</p> <p align="center">L. Savio¹, B. O. Berge¹, K. Koushan¹ & M. Axelsson² ¹MARINTEK, Norway, ²JOTUN A.S, Norway</p>	
9:50-10:15	<p align="center">DRAG TESTS ON FOUL-RELEASE COATINGS WITH BIOFILM USING AN AXYSMMETRIC TESTING BODY</p> <p align="center">C. Li¹, D. Skiadaresis¹, G. Politis¹, I. Yeginbayeva¹, M. Atlar,¹ G. Burgess¹ & J.C. Thomason² ¹University of Newcastle, UK ²Ecotecnica SCP, Mexico</p>	
10:15-11:00	Refreshments	
Friction Drag Reduction Technologies		Session A5
11:00-11:25	<p align="center">AN ENERGY SAVING TECHNIQUE FOR SHIPS BY AIR LUBRICATION SYSTEM</p> <p align="center">H. Kamiirisa, H. Kawashima & M. Makino National Maritime Research Institute, Japan</p>	
11:25-11:50	<p align="center">EXPERIMENTAL DETERMINATION OF ADDED HYDRODYNAMIC RESISTANCE CAUSED BY MARINE BIOFOULING ON SHIPS</p> <p align="center">O. Turan, Y. K. Demirel, J. Majumdera & S. Day University of Strathclyde, UK</p>	
11:50-12.15	<p align="center">MODELLING THE IMPACT OF MICRO ROUGHNESS ON SHIP RESISTANCE</p> <p align="center">B. Kidd & H. Chen International Paint Ltd., U.K.</p>	
12:15-14:00	Lunch	

Conference Programme

Day 2		29th September 2015
8:00-9:00	Registry and Coffee	
Motion response measurements		Session B4
9:00-9:25	<p align="center">INSTRUMENTATION OF AN OFFSHORE PLATFORM MODEL FOR SET-DOWN OPERATION</p> <p align="center">A. Akinturk, H. Zaman, S. Suwan, E. Kennedy, V. Benson & T. Ennis NRC, Canada</p>	
9:25-9:50	<p align="center">DCNS UPDATES ITS HYDRODYNAMIC DESIGN PROCESS FOR SUBMARINES</p> <p align="center">J. Raymond¹ & P-M Guillouet² ¹DCNS-Research, ²DCNS</p>	
9:50-10:15	<p align="center">A NETWORK MODEL CONTROL SYSTEM (NMCS) FOR MODEL AND FULL SCALE TESTS</p> <p align="center">D. Millan, R. Gash, G. Janes, K. Mews, J. Mills, J. Williams, P. Hackett & W. Pearson NRC, Canada</p>	
10:15-11:00	Refreshments	
Cavitation aspects		Session B5
11:00-11:25	<p align="center">SHIP WAKE MEASUREMENTS USING 3-D LDV SYSTEM IN LARGE CAVITATION TUNNEL OF KRISO</p> <p align="center">B-G Paik^{1,2}, J-W Ahn¹, Y-H Park¹, K-S Kim¹, H-G Cheon³, Martin Davy³ ¹University of Science & Technology, Ship & Ocean Plant Engineering, Korea; ²Korea Research Institute of Ships & Ocean Engineering, Korea; ³Dantec Dynamics</p>	
11:25-11:50	<p align="center">ABOUT THE SIZE OF NUCLEI DURING CAVITATION TEST</p> <p align="center">S. Helma Stone Marine Propulsion Ltd, U.K.</p>	
11:50-12.15	<p align="center">DESIGN AND REVIEW OF THE NEW NPT PROPELLER FOR THE PRINCESS ROYAL</p> <p align="center">A. Carchen, N. Sasaki, B. Aktas, S. Turkmen & M. Atlar University of Newcastle, U.K.</p>	
12:15-14:00	Lunch	

Conference Programme

High speed craft testing		Session A6
14:00-14:25	<p align="center">FREE RUNNING MODEL TESTS OF HIGH SPEED CRAFT TO COMPLEMENT TANK TESTING B. Friedhoff¹ & U. Feller² ¹Development Centre for Ship Technology & Transport Systems, Germany, ²Feller Yachting, Germany</p>	
14:25-14:50	<p align="center">A PRACTICAL AND EFFECTIVE PROPELLER SELECTION PROCEDURE FOR RACING RIGID INFLATABLE BOATS A. Mantouvalos MEKY, Greece</p>	
14:50-15:15	<p align="center">AN EXPERIMENTAL STUDY OF THE EFFECT OF CHANGE IN LCG ON RESISTANCE AND PLANING CAPABILITY OF A FAST VESSEL D.B. Danisman & T.B. Bastug Istanbul Technical University, Turkey</p>	
15:15-16:00	Refreshments	
Hydro structural aspects		Session A7
16:00-16:25	<p align="center">HIGH SPEED VIDEO IN FREE FALL WEDGES M. Insel Istanbul Technical University, Turkey</p>	
16:25-16:50	<p align="center">A COMPARATIVE INVESTIGATION ON BUCKLING OF SUBMARINE PRESSURE HULLS B. Firat & Y. Ünsan Istanbul Technical University, Turkey</p>	
16:50-17:15	<p align="center">ON THE STRENGTH AND STIFFNESS OF PROPELLER AND RUDDER MODELS S. Helma Stone Marine Propulsion, UK</p>	
18:00-22:00	Transport to boat and Banquet on the Bosphorus	

Conference Programme

Renewables / Tidal Turbines		Session B6
14:00-14:25	<p align="center">NUMERICAL PREDICTIONS AND VERIFICATIONS FOR HYDRODYNAMIC PERFORMANCE OF A MOORED DUAL DUCTED TIDAL TURBINE</p> <p align="center">D. Wang, B. Guo, L. Gao & D. Cheng Harbin Institute of Technology at Weihai, China</p>	
14:25-14:50	<p align="center">HYDRODYNAMIC PERFORMANCE OF A BIOMIMETICALLY IMPROVED TIDAL TURBINE BLADE</p> <p align="center">W. Shi¹, R. Rosli¹, M. Atlar¹, R. Norman¹, D. Wang², W. Yang¹ ¹Newcastle University, U.K. ²Harbin Institute of Technology at Weihai, China</p>	
14:50-15:15	<p align="center">CAVITATION TUNNEL INVESTIGATION ON THE PERFORMANCE, CAVITATION, PRESSURE PULSES & NOISE GENERATION OF MARINE CURRENT TURBINE HYDRO-SPINNA</p> <p align="center">R. Rosli, W. Shi, M. Atlar & R. Norman Newcastle University, U.K.</p>	
15:15-16:00	Refreshments	
Biofilm / Uncertainty		Session B7
16:00-16:25	<p align="center">DESIGN, MANUFACTURE AND OPERATION OF A STRUT SYSTEM DEPLOYED ON A RESEARCH CATAMARAN TO COLLECT SAMPLES OF DYNAMICALLY GROWN BIOFILMS IN-SERVICE</p> <p align="center">M. Atlar, M. Bashir, S. Turkmen, I. Yeginbayeva, A. Carchen & G. Politis Newcastle University, UK</p>	
16:25-16:50	<p align="center">BIOFILM/SLIME GROWTH FARM DESIGN</p> <p align="center">I. Yeginbayeva¹, M. Atlar¹, S. Turkmen¹ & B. Kidd² ¹Newcastle University, UK. ²International Paint Ltd, UK.</p>	
16:50-17:15	<p align="center">UNCERTAINTY ANALYSIS AND STATIONARITY TEST OF FINITE LENGTH MEASUREMENT SIGNALS</p> <p align="center">J. Brouwer, J. Tukker & M. van Rijsbergen MARIN, The Netherlands</p>	
18:00-22:00	Transport to boat and Banquet on the Bosphorus	

Conference Programme

Day 3		30th September 2015
8:00-9:00	Coffee	
ROV / Submarine / Control		Session A8
9:00-9:30	<p>HYDRODYNAMIC RESPONSES OF AN ROV DURING LAUNCH AND RECOVERY</p> <p>C. Sim, B. Ke, K. Tay, M. Bashir & S. Benson Newcastle University, UK.</p>	
9:30-10:00	<p>NEWCASTLE UNIVERSITY'S HUMAN POWERED SUBMARINE: THE UNDER ACHIEVER</p> <p>M. Davidson, U. Sohail & A. Walchester Newcastle University, U.K.</p>	
10:00-10:30	<p>REVIEW OF MEASUREMENT AND REAL TIME CONTROL SYSTEMS FOR MARINE APPLICATIONS</p> <p>M. Ertogan¹, G.T. Tayyar², S. Karakas², S. Ertugrul³ ¹Maritime Faculty-Marine Engineering, ²Naval Architecture & Marine Engineering, ³Mechanical Engineering, Istanbul Technical University, Turkey</p>	
10:30-11:00	Refreshments	
Cavitation Aspects / Underwater Noise		Session A9
11:00-11:30	<p>SYSTEMATIC CAVITATION TUNNEL TESTS FOR CAVITATION NOISE PREDICTION OF COMMERCIAL SHIPS USING A STANDARD SERIES APPROACH</p> <p>B. Aktas, M. Atlar, P. Fitzsimmons, W. Shi, S. Turkmen & N. Sasaki Newcastle University, U.K.</p>	
11:30-12:00	<p>ESTABLISHMENT AND VERIFICATION OF REPRODUCIBLE METHOD FOR COATING PROPELLER BLADES FOR EROSION DETECTION</p> <p>A. Mantzaris, B. Aktas, P. Fitzsimmons & M. Atlar Newcastle University, U.K.</p>	
12:00-12:30	<p>A STUDY FOR CAVITATING FLOW AROUND A NACA FOIL USING RANS APPROACH</p> <p>O. Usta & E. Korkut Istanbul Technical University, Turkey</p>	
12:30-14:00	Lunch	

Conference Programme

Trim / Sinkage / Rudder		Session A10
14:00-14:30	INVESTIGATION OF THE IMPACT OF RUDDER ON THE COURSE KEEPING PERFORMANCE IN ASTERN MOTION FOR LANDING SHIPS D.M. Gormus, Y. Dirik, Z. Saydam Piri Reis University, Turkey	
14:30-15:00	A PRACTICAL APPLICATION FOR TRIM AND SINKAGE MEASUREMENTS FOR HIGH SPEED MARINE VESSELS BY USING AN INERTIAL MEASUREMENT UNIT AND AN ARDUINO BOARD A. G. Avci & B. Barlas Istanbul Technical University, Turkey	
15:00	Closing Ceremony	