PAPERS AT INNOV'SAIL 2020

INVITED LECTURE

Ignazio Maria Viola, University of Edinburgh, UK
HOW SAILS GENERATE FORCES

Gavin Allwright, International Windship Association (IWSA), UK (only oral presentation)
SHIPPING FORECAST: WIND PROPULSION GATHERING STRENGTH -
AN OVERVIEW OF COMMERCIAL WIND PROPULSION DEVELOPMENTS 2020 AND BEYOND

SAILING YACHTS

IDENTIFICATION OF COURSE-KEEPING INSTABILITIES OF DOWNWIND SAILING YACHTS
M. Angelou, National Technical University of Athens, Greece
K. J. Spyrou, National Technical University of Athens, Greece

THE VERGE OF CURLING: NUMERICAL AND EXPERIMENTAL COMPARISON OF SPINNAKER AERODYNAMICS
B. Augier, IFREMER, Wave&Wind tank, Brest, France
B. Paillard, Alternative Current Energy, Bordeaux, France
M. Sacher, ENSTA Bretagne, CNRS UMR 6027, IRDL, Brest, France
J.B. Leroux, ENSTA Bretagne, CNRS UMR 6027, IRDL, Brest, France
N. Aubin, Doyle Sails, Auckland, NZ

DYNAMIC STABILITY ANALYSIS OF A HYDROFOILING SAILING BOAT USING CFD
A. Bagué, Ghent University, Belgium
E. Lataire, Ghent University, Belgium
T. Demeester, Ghent University, Belgium
J. Degroote, Ghent University, Belgium

ASSESSING THE IMPACT OF MEMBRANE DEFORMATIONS ON WING SAIL PERFORMANCE
J. Banks, University of Southampton, UK
M. Cocard, University of Strathclyde, UK

WHEN FOILING GOES WRONG – SLAMMING LOADS AND STRUCTURAL RESPONSES FROM WATER IMPACT
M. Battley, **T, Andrews**, **P. Wilson, T. Allen**, **M. Hodgson**, University of Auckland, New Zealand

A GAME THEORY APPROACH TO ANALYSE STARTING TACTICS IN SAILING
S. Berg, Materials Center Leoben, Austria
T. Lundh, Chalmers University of Technology and University of Gothenburg, Sweden
O. Spensley-Corfield, Sail 2 Win Racing, United Kingdom

STATISTICAL ANALYSIS OF SAILING FORECASTS
C. Branning, Model Accuracy Inc., USA
G. Sutcliffe, Model Accuracy Inc., USA
T. Beavers, Model Accuracy Inc., USA
U. Visser, Model Accuracy Inc., USA
R. Schutt, US Olympic Sailing Team, USA

ASSESSING VENTILATION RISK FOR SURFACE-PIERCING HYDROFOILS THROUGH NUMERICAL SIMULATION
M. Charlou, LHEEA, EC Nantes / CNRS, France
J. Wackers, LHEEA, EC Nantes / CNRS, France
G.B. Deng, LHEEA, EC Nantes / CNRS, France
E. Guilmineau, LHEEA, EC Nantes / CNRS, France
A. Leroyer, LHEEA, EC Nantes / CNRS, France
P. Queutey, LHEEA, EC Nantes / CNRS, France
M. Visonneau, LHEEA, EC Nantes / CNRS, France

FLIGHT DYNAMICS AND STABILITY ASSESSMENT FOR AN INTERNATIONAL MOTH
F. Eggert, TU Berlin, Germany
J. Henrichs, DNV GL SE, Germany
H. Hansen, DNV GL SE, Germany
K. Hochkirch, DNV GL SE, Germany

MEASURING THE FLOW-FIELD AROUND FLEXIBLE DOWNWIND SAILS USING PARTICLE IMAGE VELOCIMETRY: A FEASIBILITY STUDY INTO A NEW EXPERIMENTAL APPROACH FOR THE INVESTIGATION OF SAILING YACHTS AERODYNAMICS
E. Gauvain, Wolfson Unit MTIA, UK
J. Banks, University of Southampton, UK

VPP-DRIVEN SAIL AND FOIL TRIM OPTIMIZATION FOR THE OLYMPIC NACRA 17 FOILING CATAMARAN
K. Graf, Univ. Appl. Sciences Kiel, Germany
O.Freiheit, German Sailors Association, Germany

THREE-DIMENSIONAL VARIATIONS OF THE NACRA 17 MAIN FOIL FOR BENCHMARKING SHAPE OPTIMIZATIONS
P. Guida, University of Southampton, United Kingdom
L. Marimon Giovannetti, SSPA Sweden AB, Sweden
S. W. Boyd, University of Southampton, United Kingdom

HIGH FROUDE NUMBER EXPERIMENTAL INVESTIGATION OF THE 2DOF BEHAVIOR OF A MULTIHULL FLOAT IN HEAD WAVES
P. Kerdraon, VPLP Design, France, and Ecole Centrale Nantes, France
B. Horel, Ecole Centrale Nantes, LHEEA Lab. (ECN and CNRS), France
P. Bot, Naval Academy Research Institute, France
A. Letourneur, VPLP Design, France
D. Le Touzé, Ecole Centrale Nantes, LHEEA Lab. (ECN and CNRS), France

DEVELOPING FLUID STRUCTURE INTERACTION EXPERIMENTAL METHODOLOGIES FOR DYNAMIC FOIL MEASUREMENTS
L. Marimon Giovannetti, SPPA Sweden AB, Sweden
O. Charalampopoulos, University of Southampton, United Kingdom
J. Banks, University of Southampton, United Kingdom
S. W. Boyd, University of Southampton, United Kingdom
S. R. Turnock, University of Southampton, United Kingdom

MULTI-FIDELITY SURROGATE MODELS FOR VPP AERODYNAMIC INPUT DATA
T. Peart, University of Auckland and Doyle Sails, New Zealand
N. Aubin, Doyle Sails, New Zealand
S. Nava, Doyle Sails, New Zealand
J. Cater, University of Auckland, New Zealand
S. Norris, University of Auckland, New Zealand

AN IMPROVED PROCEDURE FOR STRONGLY COUPLED PREDICTION OF SAILING YACHT PERFORMANCE
A. Persson, SSPA Sweden AB and Chalmers University of Technology, Sweden
L. Larsson, Chalmers University of Technology, Sweden
C. Finnsgård, SSPA Sweden AB, Sweden

SPEED DIAGRAM OF A FAST FOILING SAILBOAT
M. Rabaud, Université Paris-Saclay, CNRS, FAST, 91405, Orsay, France

A RANS-BEM METHOD TO EFFICIENTLY INCLUDE APPENDAGE EFFECTS IN RANS-BASED HULL SHAPE EVALUATION
H. Renzsch, FluidEngineeringSolutions GmbH & Co. KG., Germany
B. Ward, Farr Yacht Design Ltd, USA

THE USE OF FLOW SIMULATIONS AT ARTEMIS RACING FOR THE 35TH AMERICA'S CUP
N. Rousselon, Artemis Technologies, UK

WIND-POWERED SHIPS

AN INITIAL ESTIMATE OF EROI FOR A SOFT SAILED WINDSHIP
AJ Chaplin, OneSails, UK
P Molta, Flexon Composites, Italy

PRELIMINARY RESULTS ON MEASUREMENTS OF THE ATMOSPHERIC BOUNDARY LAYER OVER THE ATLANTIC
Ulysse Dhomé, KTH Royal Institute of Technology, Stockholm, Sweden
Jakob Kuttenkeuler, KTH Royal Institute of Technology, Stockholm, Sweden
Mikael Razola, Wallenius Marine AB, Stockholm, Sweden
Antonio Segalini, KTH Royal Institute of Technology, Stockholm, Sweden

CONCEPT DESIGN AND PERFORMANCE EVALUATION OF A FOSSIL FREE OPERATED CARGO SHIP WITH UNLIMITED RANGE

E. Julià Chalmers University of Technology, Gothenburg, Sweden
F. Tillig Chalmers University of Technology, Gothenburg, Sweden
J.W. Ringsberg Chalmers University of Technology, Gothenburg, Sweden

COMPARISON OF TWO RAPID NUMERICAL METHODS FOR REDICTING THE PERFORMANCE OF MULTIPLE RIGID WING-SAILS

K. Malmek, SSPA AB and Chalmers University of Technology, Sweden
U. Dhomé, KTH Royal Institute of Technology, Sweden
L. Larsson, Chalmers University of Technology, Gothenburg, Sweden
S. Werner, SSPA AB, Sweden
J.W. Ringsberg, Chalmers University of Technology, Gothenburg, Sweden
C. Finnsgård, SSPA AB, Sweden

APPENDAGES INVESTIGATION AND THEIR EFFECTS ON MANEUVERING COEFFICIENTS FOR APPLICATIONS IN WIND ASSISTED SHIPS

L. Marimon Giovannetti, SPPA Sweden AB, Sweden
M. Alexandersson, SPPA Sweden AB, Sweden
F.Olsson SPPA Sweden AB, Sweden
S. Werner, SPPA Sweden AB, Sweden

A PERFORMANCE DEPOWERING INVESTIGATION FOR WIND POWERED CARGO SHIPS ALONG A ROUTE

F. Olsson, SSPA Sweden AB, Sweden
L. Marimon Giovannetti, SSPA Sweden AB, Sweden
S. Werner, SSPA Sweden AB, Sweden
C. Finnsgård, SSPA Sweden AB, Sweden

ROTOR SAIL GHG REDUCTION POTENTIAL, MODELLING AND SEA TRIAL VALIDATION

V Paakkari, Norsepower Ltd, Finland
A Hurford, Lloyd's Register, UK
C Craddock, Lloyd’s Register, UK

INFLUENCE OF DESIGN CHARACTERISTICS ON KITE PROPULSIVE POWER APPLIED TO AUXILIARY PROPULSION OF MERCHANT VESSELS

Q. Penloup, GTT - Liquid Motion Dpt, Saint-Rémy-lès-Chevreuse, France
K. Roncin, French Air Force Academy - CREA, Salon de Provence, France
Y. Parlier, Beyond the sea®, la Teste de Buch, France.

DIMENSIONING, DESIGN, MANUFACTURING AND PERFORMANCE ASSESSMENT OF OCEANWINGS WINGSAIL ONBOARD ENERGY OBSERVER

N Sdez, VPLP design, France
M Van Peteghem VPLP design, France

MACHINE LEARNING BASED HYDRO-MECHANIC MODELING
for Sailing Commercial Ships
N. van der Kolk, Blue Wasp, Netherlands
B. Freeman, Lakes Software, Canada