Ulrik Dam Nielsen
Associate Professor
Department of Mechanical Engineering
Fluid Mechanics, Coastal and Maritime Engineering

Postal address:
Nils Koppels Allé
403, 136
2800
Kgs. Lyngby
Denmark
Email: udn@mek.dtu.dk
Phone: 45251970
Fax: 45251961
Web address: http://www.mek.dtu.dk
Web: http://www.mek.dtu.dk

Research outputs:

Sea state estimation using multiple ships simultaneously as sailing wave buoys
Research output: Research - peer-review › Journal article – Annual report year: 2019

A brute-force spectral approach for wave estimation using measured vessel motions
Research output: Research - peer-review › Journal article – Annual report year: 2018

Deriving the absolute wave spectrum from an encountered distribution of wave energy spectral densities
Research output: Research - peer-review › Journal article – Annual report year: 2018

Online wave estimation using vessel motion measurements
Research output: Research - peer-review › Conference article – Annual report year: 2018

Response predictions using the observed autocorrelation function
Research output: Research - peer-review › Journal article – Annual report year: 2018

Sea state estimation based on measurements of wave-induced ship responses
Research output: Research › Doctoral thesis – Annual report year: 2018

Sea State Estimation Using Simultaneous Data from Multiple Observation Platforms
Research output: Research - peer-review › Article in proceedings – Annual report year: 2018

Sea State Estimation Using Vessel Response in Dynamic Positioning
Research output: Research - peer-review › Journal article – Annual report year: 2018

Ship motion-based wave estimation using a spectral residual-calculation
Research output: Research - peer-review › Article in proceedings – Annual report year: 2018

Short-term Variability of Cross-Spectral Analysis for Ship Responses in Waves
Research output: Research - peer-review › Paper – Annual report year: 2018

Study on Short-term Variability of Ship Responses in Waves – Part II: Examination of the correlation method
Research output: Research - peer-review › Article in proceedings – Annual report year: 2018
The Effect of Operational Factors on Container Ship Fuel Performance
Research output: Research - peer-review › Article in proceedings – Annual report year: 2018

A concise account of techniques available for shipboard sea state estimation
Research output: Research - peer-review › Journal article – Annual report year: 2016

Deterministic Predictions of Vessel Responses Based on Past Measurements
Research output: Research - peer-review › Article in proceedings – Annual report year: 2017

Intact stability analysis of dead ship conditions using FORM
Research output: Research - peer-review › Journal article – Annual report year: 2017

Shipboard sea state estimation based on wave induced response measurements
Research output: Research - peer-review › Sound/Visual production (digital) – Annual report year: 2018

Statistical prediction of parametric roll using FORM
Research output: Research - peer-review › Journal article – Annual report year: 2017

Transformation of a wave energy spectrum from encounter to absolute domain when observing from an advancing ship
Research output: Research - peer-review › Journal article – Annual report year: 2017

An attempt to define critical wave and wind scenarios leading to capsize in beam sea
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

A Review of Sea State Estimation Procedures Based on Measured Vessel Responses
Research output: Research - peer-review › Journal article – Annual report year: 2016

A Study on the uncertainty and sensitivity in numerical simulation of parametric roll
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Estimation of waves and ship responses using onboard measurements

Estimation of wind sea and swell using shipboard measurements – A refined parametric modelling approach
Research output: Research - peer-review › Journal article – Annual report year: 2015

Evaluation of Shipboard Wave Estimation Techniques through Model-scale Experiments
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Improved Wave-vessel Transfer Functions by Uncertainty Modelling
Research output: Research - peer-review › Journal article – Annual report year: 2016

Proceedings of the 13th International Symposium on PRActical Design of Ships and Other Floating Structures (PRADS' 2016)
Research output: Research - peer-review › Anthology – Annual report year: 2016

Selection of the optimum combination of responses for Wave Buoy Analogy - An approach based on local sensitivity analysis
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

New Concepts for Shipboard Sea State Estimation
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015
Prediction of First-Order Vessel Responses with Applications to Decision Support Systems
Research output: Research › peer-review › Article in proceedings – Annual report year: 2015

Response-based sea state estimation for onboard DSS - Safe and Efficient Marine Operations
Research output: Research › Sound/Visual production (digital) – Annual report year: 2015

Sea State Estimation Using Model-scale DP Measurements
Research output: Research › peer-review › Article in proceedings – Annual report year: 2015

Study on Short-term Variability of Ship Responses in Waves
Research output: Research › peer-review › Journal article – Annual report year: 2015

Trend modelling of wave parameters and application in onboard prediction of ship responses
Research output: Research › peer-review › Article in proceedings – Annual report year: 2015

Uncertainties in ship-based estimation of waves and responses
Research output: Research › peer-review › Article in proceedings – Annual report year: 2015

Full Scale Measurements of the Hydro-Elastic Response of Large Container Ships for Decision Support
Research output: Research › Ph.D. thesis – Annual report year: 2014

Loads for use in the design of ships and offshore structures
Research output: Research › peer-review › Journal article – Annual report year: 2015

Parametric estimation in the wave buoy analogy - an elaborated approach based on energy considerations
Research output: Research › peer-review › Article in proceedings – Annual report year: 2014

Reducing roll motion by passive free surface tanks
Research output: Research › peer-review › Article in proceedings – Annual report year: 2014

Study on Short-term Variability of Ship Responses in Waves
Research output: Research › peer-review › Article in proceedings – Annual report year: 2014

The New Maritime Engineering Education at the Technical University of Denmark
Research output: Research › peer-review › Article in proceedings – Annual report year: 2014

Comparisons of Means for Estimating Sea States from an Advancing Large Container Ship
Research output: Research › peer-review › Article in proceedings – Annual report year: 2013

Educating Maritime Engineers for a Globalised Industry
Research output: Research › Sound/Visual production (digital) – Annual report year: 2013

Evaluation of Response Prediction Procedures using Full Scale Measurements for a Container Ship
Research output: Research › peer-review › Article in proceedings – Annual report year: 2013

Study on a method for estimating fuel consumption in a seaway
Research output: Research › peer-review › Article in proceedings – Annual report year: 2013

Blind estimation of a ship’s relative wave heading
Research output: Research › peer-review › Article in proceedings – Annual report year: 2012
Educating Maritime Engineers for a Globalised Industry - Bridging the Gap Between Industry and Universities
Research output: Research - peer-review > Article in proceedings – Annual report year: 2012

Fremtidens maritime ingeniøruddannelse - Tiltag og visioner på Danmarks Tekniske Universitet
Research output: Communication > Sound/Visual production (digital) – Annual report year: 2012

Sea state estimation from an advancing ship – A comparative study using sea trial data
Research output: Research - peer-review > Journal article – Annual report year: 2011

Sea state estimation from an advancing ship - The wave buoy analogy: Presentation at Skibsteknisk Selskab
Research output: Communication > Sound/Visual production (digital) – Annual report year: 2012

The Maritime Engineering Education: meeting industry demands
Research output: Research > Journal article – Annual report year: 2012

Towards fault-tolerant decision support systems for ship operator guidance
Research output: Research - peer-review > Journal article – Annual report year: 2012

A novel approach for navigational guidance of ships using onboard monitoring systems
Research output: Research - peer-review > Journal article – Annual report year: 2011

A Study on Parametric Wave Estimation Based on Measured Ship Motions
Research output: Research - peer-review > Journal article – Annual report year: 2012

Research output: Communication > Report – Annual report year: 2012

Onboard monitoring of fatigue damage rates - Decision support and sea state estimation
Research output: Research > Sound/Visual production (digital) – Annual report year: 2011

Onboard monitoring of fatigue damage rates in the hull girder
Research output: Research - peer-review > Journal article – Annual report year: 2011

Onboard sea state estimation based on measured ship motions
Research output: Research - peer-review > Article in proceedings – Annual report year: 2011

Calculation of mean outcrossing rates of non-Gaussian processes with stochastic input parameters - Reliability of containers stowed on ships in severe sea
Research output: Research - peer-review > Journal article – Annual report year: 2010

Estimation of fatigue damage from full-scale measurements of hull girder stresses
Research output: Research - peer-review > Article in proceedings – Annual report year: 2010

Estimation of sea state parameters from measured ship responses: The Bayesian approach with fixed hyperparameters
Research output: Research - peer-review > Article in proceedings – Annual report year: 2010

Fault Isolation and quality assessment for shipboard monitoring
Research output: Research - peer-review > Article in proceedings – Annual report year: 2010
Fault Isolation for Shipboard Decision Support
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

Lecture notes in ship operations
Research output: Education › Compendium/lecture notes – Annual report year: 2010

Navigational guidance based on combined use of sea state estimation and response measurements
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

The wave buoy analogy: Analysis of synthetic data by Bayesian modelling
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

A step towards risk-based decision support for ships - Evaluation of limit states using parallel system analysis
Research output: Research - peer-review › Journal article – Annual report year: 2009

Fault Detection for Shipboard Monitoring and Decision Support Systems
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Fault Detection for Shipboard Monitoring – Volterra Kernel and Hammerstein Model Approaches
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Numerical Simulations of the Rolling of a Ship in a Stochastic Sea - Evaluations by use of MCS and FORM
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Calculating Outcrossing Rates used in Decision Support Systems for Ships
Research output: Research - peer-review › Article in proceedings – Annual report year: 2008

Introducing two hyperparameters in Bayesian estimation of wave spectra
Research output: Research - peer-review › Journal article – Annual report year: 2008

Risk-based decision support – Evaluation of limit states using parallel system analysis
Research output: Research › Sound/Visual production (digital) – Annual report year: 2008

The wave buoy analogy - estimating high-frequency wave excitations
Research output: Research - peer-review › Journal article – Annual report year: 2008

Bayesian Estimation of Wave Spectra – Proper Formulation of ABIC
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

Response-Based Estimation of Sea State Parameters
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

Response-based estimation of sea state parameters - Influence of filtering
Research output: Research - peer-review › Journal article – Annual report year: 2007

Comparisons of Methods for Estimation of On-site Directional Wave Spectra
Research output: Research - peer-review › Article in proceedings – Annual report year: 2006

Estimations of On-site Directional Wave Spectra from Measured Ship Responses
Research output: Research - peer-review › Journal article – Annual report year: 2006
SeaSense - Real-time Onboard Decision Support
Research output: Research - peer-review › Article in proceedings – Annual report year: 2006

Estimation of directional wave spectra from measured ship responses
Research output: Research › Ph.D. thesis – Annual report year: 2005

Estimation of Directional Wave Spectra from Measured Ship Responses
Research output: Research - peer-review › Article in proceedings – Annual report year: 2005

Ride Control Systems - Reduced Motions on the Cost of Increased Sectional Forces ?
Research output: Research - peer-review › Article in proceedings – Annual report year: 2003

Projects:

Sensor fusion on real-time data to drive vessel performance
Project: PhD

Reconfigurable Modular Robotic System for Aquatic Environment
Project: Research

Monitorering og beslutningsstøtte for skibes sødygtighed
Project: PhD

Development of a decision support system for ships based on continous measurements
Project: PhD

Vessel Performance Control
Project: PhD

Onboard Decission Support Systems for Optimal Operation
Project: PhD

Operation of Ultra Large Contianer Ships
Project: PhD

Integrieret beslutningsstøttesystem for brug ombord i skibe
Project: PhD

Activities:

Sea state estimation using networked heterogeneous sensor systems
Activity: Talks and presentations › Conference presentations

Response prediction of vessel motions and sea state estimation from ships
Activity: Talks and presentations › Conference presentations

Shipboard sea state estimation based on wave-induced response measurements
Activity: Talks and presentations › Conference presentations

New Concepts for Shipboard Sea State Estimation
Activity: Talks and presentations › Conference presentations
Maritime Engineering Education (at DTU): What are the challenges?
Activity: Talks and presentations › Conference presentations

Response-based sea state estimation for onboard DSS - Safe and Efficient Marine Operations
Activity: Talks and presentations › Conference presentations