

Pitch	Titel	Abstract	Contact
1	<b>Industrial needs for research from a shipbuilders point of view</b>		<b>Peter van Terwisga</b> , Damen Shipyards, Research Coordinator; peter.van.terwisga@damen.com;
2	<b>Research on a robust and efficient computational approach for hydroelastic problems</b>	The research is aiming to develop a high-fidelity, robust and efficient computational approach for hydroelastic problems. This will be achieved by adopting a fully implicit strongly coupled finite element method that satisfies conservation of mass, momentum and energy <i>a-priori</i> . Dual-based error estimation and mesh adaptation should further increase reliability and efficiency	<b>Ido Akkerman</b> , Assistant Professor, Ship Hydromechanics & Structures, TU Delft / 3ME, +31 (0)15 27 88381, I.Akkerman@tudelft.nl
3	<b>Numerical modeling of wind flow and related processes</b>	The Department of Building Physics and Services at Eindhoven University of Technology has extensive experience in numerical modeling of wind flow and related processes. Of special interest for the maritime community are application areas such as local wind velocities, wind loads and pollutant dispersion (e.g. of exhaust gases).	<b>Ivo Kalkman</b> , post-doctoral researcher at Eindhoven University of Technology; I.M.Kalkman@tue.nl; 0402478576
4	<b>Proposal Ice Hazards – Maritime safety in the High North</b>	With the increase of open water areas in the High North, more ships are active (transport/transit, cruises, offshore operations with crew change and supply). Open water is not ice-free and the weather is cold in autumn so that for such operations the hazards icing and collision with drifting ice features are imminent. <b>It is proposed to investigate:</b> 1. Collision of a ship with a growler / bergy bit (ice mass 50-500 and 500-1500 t resp.) and the damage caused by that, resulting in a computational model; 2 Carry out validation measurements for spray generated at the ship's bow, which is a major source for icing. (Last year, in cooperation with Marin and Tu Delft a computational model was developed for spray but there exists no validation material)	<b>Albert B. Aalbers</b> , MARIN, +31 6 51880034, a.b.aalbers@marin.nl
5	<b>Risk reduction in offloading operation by assessing human factors.</b>	Research has indicated that up to 80% of all accidents in marine operations, such as offloading operations, are caused by human factors of which fatigue holds a significant part. Presently fatigue and workload levels of the operating crews vary significantly. This is due to differences in offloading operations, i.e. with regards to operating environments and watchkeeping schedules. In order to reduce risks present during offloading operations, one has to know where, and why, the risks occur prior to decreasing them. This research aims to map the risks that occur with regards to human factors during offloading operations in order to give recommendations which will lead to lower risks with regard to both fatigue and workload. A measurement methodology will be designed which is capable of presenting those fatigue and workload levels. Knowledge of these levels will be used as input data for the recommendations and/or adjustments in the task structures of mooring masters. Results can be used in current offloading operations, as well in future FPSO operations.	<b>Karen van Vliet</b> , HF20; Researcher (PhD Candidate TU Delft); +31 70 204 0129 ,+31 6 55 52 44 29; www.HF-20.com ; k.vanvliet@HF-20.com

7	<b>Research topics on spoolable composite pipes for the offshore industry, with a main focus on deepwater.</b>	Airborne Oil & Gas supplies spoolable composite pipes for the offshore industry, with a main focus on deepwater. These fully bonded thermoplastic pipes are a revolution in the industry, and a new solution next to rigid steel pipe and flexibles. The first products are applied in the field and have been qualified (Shell). Research topics are high temperature materials, modelling of composites, integrity monitoring, installation methods, offshore dynamics and seabed stability.	<b>Marcus Kremers</b> , CTO Airborne Oil & Gas, kremers@airborne.nl ,+31 6 21250007
8	<b>GasDrive</b>	The GasDrive program aims to maximize the opportunities of Liquefied Natural Gas (LNG) as fuel on a maritime platform by integrating a gas turbine, solid oxide fuel cell (SOFC), and a gas engine. The expelling of the relatively clean LNG exhaust gases in (sea)water is the next research priority together with the marine biological effect of the exposure of exhaust bubbles to seawater. Finally, the potential effect of these exhaust gas bubbles on a new nano technological surface structure will be investigated in order to reduce the resistance of the underwater hull of the ship and reduce the hull fouling	<b>Klaas Visser and Milinko Godjevac</b> , Assistent Professors , TU Delft, faculty 3ME, Maritime Technology, section Ship Design, Production and Operations; k.visser@tudelft.nl, M.Godjevac@tudelft.nl ;
8.5	<b>Smart Dust, ... in water</b>	Monitoring the underwater world is a formidable task due to its complexity, size and extreme harshness, and due to the limited technology we can count on today, whose use needs costly installations, sea trips, specialized personnel, and sometimes dangerous operations. Once installed, collecting the data from the sensor systems used is by no means simple. Long cables may be needed to connect underwater sensors to sea-surface equipment from which data can be collected or transmitted. In addition very costly communications systems may be required. Even though today's networked embedded systems provide solutions for many challenges, monitoring platforms for underwater applications bring forward yet new unanswered questions and issues.	<b>Paul Havinga</b> , Professor in Pervasive Systems, University of Twente, Faculty of Electrical Engineering, Mathematics AND Computer Sciences, p.j.m.havinga@utwente.nl , +31 (0)53 4864619; +31 (0)653161099
9	<b>Watergas additive for Marine engines</b>	Watergas op de juiste manier aangesloten en in werking gesteld, maakt motoren; stiller, krachtiger, schoner en zuiniger	<b>Bert van Herwaarden</b> , bvherwaarden@xs4all.nl; 0653167340
10	<b>Water technology meets chaos theory</b>	Key to both water treatment (e.g. recovery of resources from wastewater) and industrial mixing and heat-transfer processes is efficient and well-controlled transport and distribution of e.g. chemicals, energy, minerals and bioplastics. Chaos theory has proven its worth for design and optimization of such industrial processes. This ansatz may have equally great potential for water-treatment technology.	<b>Michel Speetjens</b> , Assistant professor, Energy Technology Laboratory, Dept. Mechanical Engineering, Eindhoven University of Technology m.f.m.speetjens@tue.nl ,
11	<b>Ocean Grazer</b>	Ocean Grazer is an innovative device for extraction and storage of ocean energy, mainly wave energy. Its ability to adapt to specific wave profiles requires sensing of the wave profile before it enters the system. Developing a sensor system (radar) is the focus of our pitch.	<b>Wout Prins</b> , Project manager Ocean Grazer, RUG, ENTEG, APE ,w.a.prins@rug.nl ,050-3638429
12	<b>Modeling of turbulent hyperconcentrated flow in dredging applications</b>	Many dredging applications such as pipeline transport, jetting and trenching involve hyperconcentrated sediment flows and/or bed-water interfaces. In this research proposal we will focus on horizontal pipeline transport. It is proposed to use a combination of experiments, high performance direct numerical simulations to derive a simplified multiphase model to predict concentration, velocity and pressure distributions on both laboratory and prototype scale.	<b>Geert H. Keetels</b> , Assistant Professor, Marine & transport technology/ Offshore and Dredging engineering, g.h.keetels@tudelft.nl and W.P. Breugem, Assistant Professor, Process & Energy /Fluid Mechanics; +31 15 27 84057
13	<b>Large diameter seawater intake pipe for Ocean Thermal Energy Conversion</b>	Ocean Thermal Energy Conversion (OTEC) uses the natural temperature difference in tropical oceans to produce clean and predictable electricity. Its estimated global market size in 2023 is between 0.6 and 6 Billion Euros. OTEC's main challenge is manufacturing, deploying, and operating a 4m diameter, 1000m long seawater intake pipe, connected to a floating structure. Research and development will have to prove its feasibility and should contribute to a Dutch leading position in OTEC.	<b>Berend Jan Kleute</b> , CTO, Bluerise, b.j.kleute@bluerise.nl, +31650858746

14	<b>ProMo Ships (Probabilistic Models for multi-axial assessment of Ships)</b>	The research will map the existing models and identify & remedy important shortcomings in this coverage. The goal is to develop a unifying design methodology for integration of ship design, production, operation, maintenance and demolition combining both existing and new probabilistic models. The end result will allow the user to make a probabilistic assessment of the best options for the vessel, taking the entire (potential) life of the vessel into consideration	<b>Jeroen Pruyn</b> , Assistent Professor, TU Delft, faculty 3ME, Maritime Technology, section Ship Design, Production and Operations; J.F.J.Pruyn@tudelft.nl;
15	<b>Innovative Deep Sea Mining techniques</b>	The proposed research focuses on the development and preparation of environmentally acceptable techniques for the capturing of minerals from the ocean floor. This requires both technical innovations to apply and regulatory obstacles to remove. Biomimetic engineering is preferred as a solution to minimize energy consumption and environmental impacts.	<b>Robbert G. Jak</b> , Project leader Impacts of Offshore Activities, Maritime Department IMARES- Institute for Marine Resources and Ecosystem Studies, +31 317 486 374, Robbert.Jak@wur.nl, Vestiging Den Helder
16	<b>(Big) Data Value Creation for Maritime</b>	Big data is a term for any collection of data sets so large or complex that it becomes difficult to process them using traditional data processing applications. The challenges include analysis, capture, curation, search, sharing, storage, transfer, visualization, and privacy violations. Ships&Operations already create large data sets. How can the Maritime sector benefit from "Big-Data" and can we speed the process by learning from other domains. TNO wants to start a initiative together with you and the Big Data Value Center	<b>Pieter Boersma en Dan Veen</b> , TNO Maritiem en Offshore, Delft, Pieter.Boersma@tno.nl, Dan.Veen@tno.nl;
17	<b>Application of Big Data Models in Maritime, Delta and Water Technologies</b>	The Leiden Centre of Data Science does both fundamental and applied big data research. For example, in our InfraWatch project we store and analyze huge amounts of sensor data from the Hollandse Brug for structural health monitoring. We are interested in cooperation in Delta, Maritime and Water technology projects. For us it is important to validate our mathematical methods on real data.	<b>Aske Plaat and Joost Kok</b> , professor of Data Science at the Leiden University, Leiden Centre of Data Science, 06 30397718
18	<b>A combined proposal on (aquatic) soil mechanic stability issues.</b>	<b>Delta and Water Technology:</b> Capturing pre-failure precursors and the changes in horizontal earth pressures along the Bishop and Van-type failure surfaces of a dyke: Novel in-situ, non-invasive technique using high-resolution seismic interferometry integrated with advanced physical modelling and numerical simulations / <b>Maritime Technology:</b> A novel Early Warning System for submarine slopes prone to failure: Non-invasive monitoring of horizontal stress changes in marine sediments by an innovative monitoring approach utilizing stress-sensitivity of shear waves to detect precursors of mass movements	<b>Ranjit Ghose</b> (Asst. Prof.), TU Delft, Faculty of Civil Engineering and Geosciences; Section of Geoengineering; r.ghose@tudelft.nl
19	<b>Gas hydrate-induced submarine landslides: advanced physical and numerical modelling</b>	There is a large evidence and little understanding of gas hydrates dissociation inducing submarine landslides. We propose the use of geo-centrifuge modelling incorporating novel measurement and visualisation techniques, as well as advanced thermo-hydro-mechanical simulations to investigate the interactions between marine sediments and dissociated gas hydrates	<b>Amin Askarinejad</b> , Assistant Prof. of experimental soil mechanics, TU Delft, CITG, Section Geo-Engineering, +31 (0)15 2783326, A.Askarinejad@tudelft.nl, www.citg.tudelft.nl/AAskarinejad