Advances in Maritime & Naval Science & Engineering

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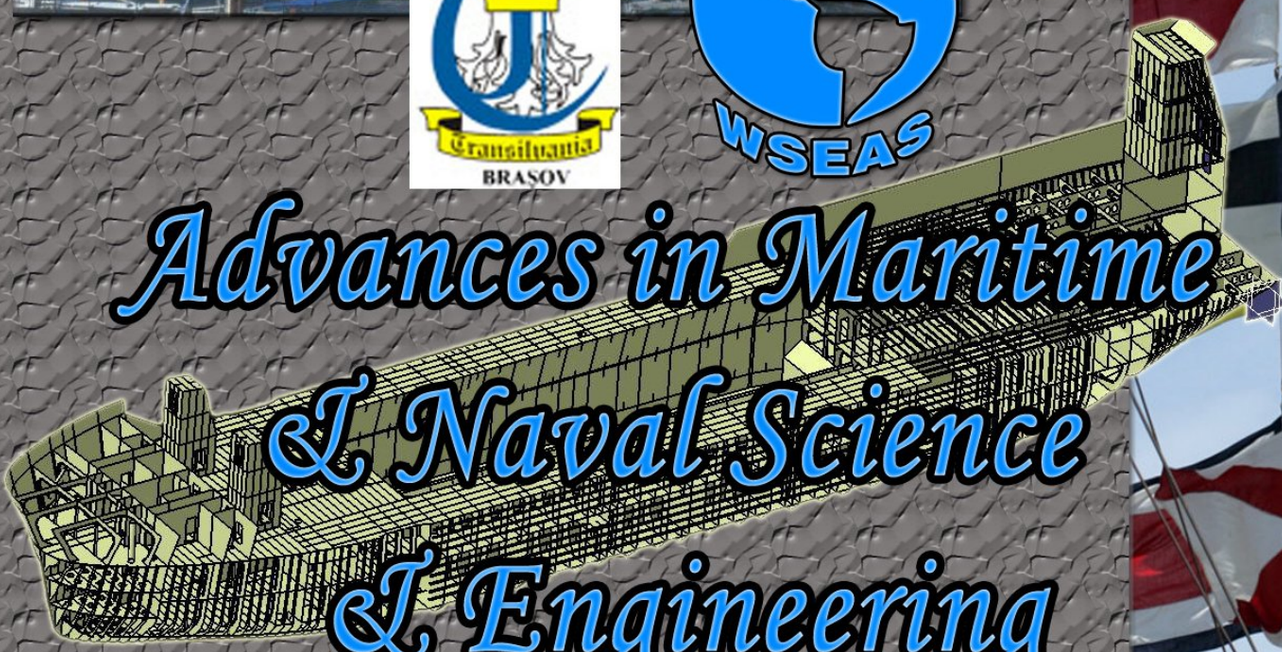

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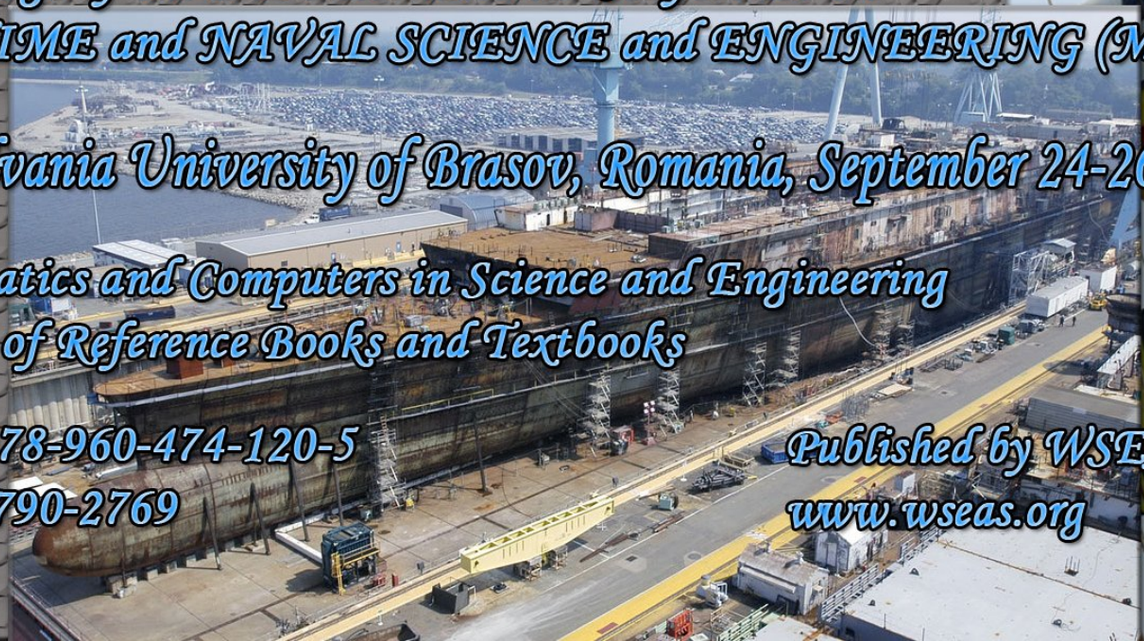
MARITIME and NAVAL SCIENCE and ENGINEERING (MN '09)

Transilvania University of Brasov, Romania, September 24-26, 2009



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Preface

This year the 2nd International Conference on MARITIME and NAVAL SCIENCE and ENGINEERING (MN '09) was held in Brasov, Romania, September 24-26, 2009. The Conference remains faithful to its original idea of providing a platform to discuss naval and ship science and engineering, marine and maritime science and engineering, coastal science and engineering, ports design and technology, oceanology - oceanic engineering, sea biology and sea ecology etc. with participants from all over the world, both from academia and from industry.

Its success is reflected in the papers received, with participants coming from several countries, allowing a real multinational multicultural exchange of experiences and ideas.

The accepted papers of this conference are published in this Book that will be indexed by ISI. Please, check it: www.worldses.org/indexes as well as in the CD-ROM Proceedings. They will be also available in the E-Library of the WSEAS. The best papers will be also promoted in many Journals for further evaluation.

A Conference such as this can only succeed as a team effort, so the Editors want to thank the International Scientific Committee and the Reviewers for their excellent work in reviewing the papers as well as their invaluable input and advice.

The Editors

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Plenary Lecture 1

The Development of Numerical Modeling in Turkey: Coastal Engineering Problems

Assistant Professor Asu Inan
Environmental & Technical Research of Accidents
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Abstract: The speech is divided in four parts. In the first part, the history and development of coastal engineering in Turkey will be told. In the second part, the philosophy and approaches of numerical modeling in coastal engineering will be presented. In the third part, the general information of the numerical models such as wave transformation, hydrodynamic and risk models prepared at Gazi University will be given. Finally, UNDA07, a numerical model of wave transformations based on extended mild slope equations, will be explained in details.

Brief Biography of the Speaker: Dr. Asu Inan received her B. Sc. in Civil Engineering from Gazi University, Turkey. She then completed her M.Sc. and Ph.D. in Coastal Engineering at Gazi University. She worked for eight years as a research assistant in Hydraulic Division of Civil Engineering Department during her graduate education. She had Ph.D. in 2007 and since then, she has been working in Environmental & Technical Research of Accidents Department of Institute of Science & Technology in Gazi University as Assistant Professor. Her works are focused on wave mechanics, mild slope equations and numerical modeling. She has twenty five published papers in several journals and conference proceedings books. She attended to international summer courses as a scholar.

Plenary Lecture 2

New Teaching Methods for Marine Engineer University Studies

Professor Jose A. Orosa
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Abstract: Nowadays, in convergence of European university studies, the syllabus of the marine engineer university studies in Spain presents the need of realistic software tools for design of equipments. These software tools must consider the limited resources in a ship.
On the other hand, it was found the need of a time reduction to teach subjects like applied thermodynamics. In consequence, the Department of Energy and Marine Propulsion of the University of A Coruna began a research task to solve this problem. New software resources like EES (Engineering Equation Solver) and programming languages like VBA (Visual Basic for Applications) were chosen as the best answer.

Brief Biography of the Speaker: Jose Antonio Orosa Garcia is graduated in Marine Engineer and Naval Architecture at the University of A Coruna and PhD in marine Engineer. He is the prize-winner of the studies of Master in Marine Engineer. During last years he has participated in the International Energy Agency Annex 41 and collaborates with the INEGA and IDEMEC of the University of Porto in research about new learning methods for university studies like marine engineers. On the other hand his research activities are centred in work risk prevention in ships. Nowadays, he is Director of the Department of Energy of the University of A Coruna.

Plenary Lecture 3

A New Frontier in Marine Technology – Gas Hydrates, as a Source of Energy and as a Means of Natural Gas Transportation

Professor Deniz Unsalan
Piri Reis University
Istanbul, Turkey
E-mail: denizunsalan@yahoo.com

Abstract: Gas hydrates, or clathrates, are polyhedral shaped crystalline structures which certain gases, mainly light alkanes, form with water under moderately low temperature (of a few centigrades) and high pressure (of about 3 megapascals) conditions. When heated to near-room temperatures or when the pressure upon them is released, they yield the two ingredient components, which one of them is the natural gas.
Gas hydrates are found in nature at the depths of seas exceeding 300 metres, mixed with bottom sediments or under the arctic permafrost layer. It is estimated that most of the methane content of the earth is in the form of gas hydrates just beneath the sea floor, which one of them is the Black Sea. However, the high hydrostatic pressure levels at those depths pose a challenge for the marine technologists who want to exploit this new opportunity. The paper to be presented has a proposal for an extraction scheme for the gas hydrates in the depths of the seas.
Another aspect of gas hydrates is that they offer a fourth alternative for the transportation of gas hydrates, in addition to the existing means (pipelines, liquefied natural gas (LNG) and compressed natural gas(CNG)). By this way, it is possible to avoid the high pressures of the CNG and cyrogenically low temperatures of the LNG concepts. A unitized cargo transportation scheme derived from the lighter aboard ship (LASH) concept for the transportation and storage of natural gas in gas hydrate form is presented and candidate ship forms for that concept are presented.

Brief Biography of the Speaker: Deniz Unsalan was born in Izmir, Turkey in 1953. He was educated in Ankara and Istanbul, receiving his undergraduate education from the Turkish Naval Academy in 1973. He served in the Turkish Navy ships before and after his postgraduate education. He received "Master of Science" and "Mechanical Engineer" degrees from the Naval Postrgraduate School at Monterey, California in 1980. He was a British Council Scholar at the University of Newcastle upon Tyne, U.K. between 1982-1984. He received his Doctor of Philosophy degree in Naval Architecture in 1993 from the Istanbul Technical University.
He was a lecturer in Marine Engineering at the Turkish Naval Academy between 1987 and 1994, Assistant Professor at Istanbul Technical University Maritime Faculty between 1994 and 1996, Associate Professor at Near East University in Cyprus between 1996-2003, at Dokuz Eylul University Institute of Marine Sciences and Technology between 2003-2006. He became a full Professor in 2006. He will start his new post as the Professor of Marine engineering at the Piri Reis University in Istanbul, Turkey on September 2009.