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SECTION I – NAVIGATION AND MARITIME TRANSPORT

1. CONSIDERATIONS ON BROACHING PHENOMENON AND ITS INFLUENCE ON LOSS OF SHIP STABILITY IN FOLLOWING SEAS

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ABSTRACT

Ship stability in heavy seas has become one of the areas of the primary concern among ship designers and researchers. The effect of large waves may lead to ship capsize in a different scenarios. Broaching is one of the phenomenons that can lead to ship stability loss or even capsize in following longitudinal waves. The present paper presents the broaching phenomenon as appears on board vessel and point out the factors that influence ship's behaviour due to such situation. A possible solution for assessment such phenomenon is given in a form of recommendation for future development of stability criteria that include the broaching as a possible stability failure mode in heavy seas.

Keywords: *broaching, stability, capsize, criteria.*

2. KITE INFLUENCE ON THE SHIP'S CAPACITY OF MANEUVERING AND COURSE STABILITY FOR THE UNCONVENTIONAL MIXED PROPULSION

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ABSTRACT

More than two centuries since the first steam-powered engine was installed on board of a ship ("Clermont", 1807), followed shortly by the invention of the Diesel engine, marine pollution and atmospheric pollution, due to marine propulsion engines, reached alarming levels. Despite all efforts made by the ship-owners, ship builders and all those involved in shipping, the results were not as expected.

In the early twentieth century, given the small number of existing ships on the world market, nobody issued the problem regarding high fuel consumption and air pollution, Without doubt, using unconventional methods of propulsion is a big step towards reducing air pollution.

We can say that the old methods of propulsion systems have returned to date, on the same principles discovered long time ago, but now using the latest technologies and equipment.

The three natural sources: wind, sun and waves showed up at the moment, at least experimentally, (but also practically for wind and solar energy), that future naval propulsion will be provided by mixed methods combined with conventional propulsion engine to some extent, while the future technological development will allow us to use only natural sources.

We say "conventional" propulsion systems, those systems that use fuels to power up the combustion engine and produce movement of rotation of the crankshaft and thus the propeller, thereby moving the ship.

"Unconventional" systems are those systems, methods, ways that do not use fuel powered engine power, or do not work in conjunction with it.

In this paper we watched and analyzed through the simulator, the influence that the kite has over the maneuvering and the ship's course stability of powered combined engine - kite ship.

Keywords: *kite traction, yawing moments, total aerodynamic force, torque moments.*

3. COMPUTER SIMULATION OF THE MANUFACTURING PROCESS OF WOODEN SHIP MODEL, IN ALBANIAN WOODENWORK ENTERPRISES

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ABSTRACT

Wooden ship models are often required for reasons of production, marketing and for tank testing. The main problems encountered in the production of these models, according the traditional process, mainly are related to

problems of accuracy and symmetry defects. When the models are produced for production and marketing purposes these problems, lead their influence in the costs and production times and delivery. When the models are produced for experimental purposes (tank tests), problems related to symmetry affect the accuracy of the experimental results and consequently affect the prediction of ship power and dimensioning of its propulsion system. An efficient way to meet the current challenges and overcome the main problems relating the manufacturing sector of ship wooden model is the implementation of a modern production process, supported by work centres with numerical control machines (CNC). In this article will be present a procedure, that we have implemented in a Albanian woodworking enterprises, for producing wooden ships models, through the use of CAD/CAM technique and numerical control machines.

Keywords: *CAD, CAM, CNC, Ship Model.*

4. THE MODERN DESIGN OF NAVAL STRUCTURES

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ABSTRACT

Throughout history, the shipping has played an essential role in transportation and trade. Nowadays, approximately 95 % of traded goods are transported by sea. The remarkable expansion of commercial and industrial markets over the last 50 years would have been impossible without a stable and diversified network of naval, maritime and river transportation.

Keywords: *ship types, Registry Rules, structural theories, shipbuilding, structural design*

5. CHALLENGES FOR MARITIME TRANSPORT IN THE ERA OF GLOBALIZATION

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ABSTRACT

Maritime transport industry develops according to specific tendencies having an impact on port infrastructures and superstructures. First of all there is the economy's tendency to transport more cargo with low costs in a developed liberalization context, during a shorter period of time in a market environment more open towards competitiveness. Secondly, there is the technological development tendency having the same objective, that of a higher productivity by increasing ships' dimensions, higher speed, low transport costs as well as reaching objectives concerning environment protection by reducing risks and consequences following accidents or by reducing the impact that maritime industry has over environment.

Keywords: *globalization, maritime industry, environment protection, shipping, economy.*

SECTION II – MECHANICAL ENGINEERING AND ENVIRONMENT

6. STRESS AND STRAIN ANALYSIS OF A TOWER CRANE ARM

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ABSTRACT

This paper presents the analysis of a tower crane arm using the finite elements method. It will be draw a crane arm using sizing tehnology of the tower crane from the tehnical prospects of the producer, and for the stress and deformation analysis it will be use the finite element analysis software ANSYS 14.5.

With the analysis program we will learn about the behavior of the crane under load. It will be made a comparativ study between two section, a square and a triangular section, that form the crane arm.

Keywords: *finite element method, crane arm, truss, tension*

7. IDEAS REGARDING THE FATIGUE ANALYSIS OF THE BOGIE FRAMES

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ABSTRACT

Bogies are one of the multifunctional parts of trains which are extremely subjected to random loads. This type of oscillating and random excitation arises from irregularities of the track including rail surface vertical roughness, rail joints, variance in super-elevation, and also wheel imperfections like wheel flats and unbalances. Since most of the previously mentioned sources have random nature, a random based theory should be applied for fatigue life estimation of the bogie frame. Static and dynamic forces applied on the bogie with biaxial frame have been obtained for different speeds and rail roughness. The von Mises stresses are adopted as equivalent stresses in the strength calculation. The results show that maximum stress always has been induced in the bogie bowl also the increase in bogie's speed has remarkable effect on the increment of applied stresses in the bogie frame.

Keywords: *Bogie, frame, fatigue, system, FEM, stress.*

8. STUDY OF THE EFFECTS OF VIBRATIONS ONTO THE RAILS

AXINTE TIBERIU - *Constanta Maritime University, Romania*

ABSTRACT

The paper presents analytical and finite element solutions to the problem of a vibrating beam on an elastic foundation. An application example is a concrete railway sleeper embedded in an elastic medium (the ballast). The sleeper is also elastically connected to the rails. The beam (sleeper) is divided into sections where each section may or may not be supported by the elastic foundation. The elastic connections to the rails are situated at the two joinings of the three sleeper sections. Some conclusions are that Euler-Bernoulli beam theory can be used to calculate two, or maximum three, eigen frequencies of the sleeper. The foundation stiffness influences the lowest bending-mode eigen frequency the most; higher eigen frequencies are practically unaffected by the foundation stiffness. The influence of rail pad (and rail) stiffness on the sleeper eigen frequencies is negligible.

Keywords: *Vibration, system, FEM, rail, beam.*

9. PROPELLER MODELLING USING CFD TECHNIQUES. SIMULATION AND REPORT

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ABSTRACT

Computational fluid dynamics (CFD) represents a branch of fluid mechanics that uses algorithms, numerical methods and computers in order to simulate various processes associated to flow conditions.

In this manner, the flow developed in naval propellers is simulated by using a number of conservation equations together with several additional equations, models for turbulence, pressure, cavitation, heat exchange and chemical species transport or dispersed phases equations. Anyway, there may be several approaches when developing the simulation scenario. One of them is the steady flow simulation, where all the flow quantities depends only on the spatial location. When developing transient simulations, all the flow parameters changes with time. The aim of this article is to study the differences established between the obtained results in the two cases.

Keywords: *CFD, simulation, mesh; Navier - Stokes equations, turbulence modeling, fluid continuity, momentum conservation.*

10. GAIN PRACTICE MAINTENANCE EVALUATION FOR A NAVAL BOILER

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ABSTRACT

This paper present an evaluation method for the average temperature difference at a heat exchanger (naval boiler), considering the specific contribution of its main parameters: the maximum heat difference and the minimum heat difference. In order to determine the average temperature difference, a nomogram was built; also, in order to quantify the contribution of the weighting coefficients we propose the use of a table (table 4). This paper can be useful to the exploitation staff working with the heat delivering equipments in order to adopt an optimum operational regim and also to the maintenance staff having the responsability to rehabilitate the composing circuits of various equipments and installations. Therefore, by making a differentiation between the contributions of the main parameters, minimum/maximum differences, on the average temperature difference Δt_{med} , both the user and the maintenance activity perceive this method as a useful tool.

Keywords: *Counter-currents apparatus, Mean difference of temperature, The maximum/minimum difference, Growing exponent, The contribution of maintenance give by the I_M indicator.*

11. DETERMINATION OF INERTIA FORCES ACTING ON BREAK BULK CARGO EN ROUTE

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ABSTRACT

The paper presents the analytical method of defining inertia forces that act on break bulk cargo as a result of the oscillatory motion of the vessel exposed to the effect of ambient forces. Considering that the linear models of roll, pitch and heave applicable in this case, the problem is solved by expressing the angle of heel, the angle of pitch, and the amplitude of heave. The obtained functions are differentiated and the inertia forces are determined by means of applying the Newton's second law.

Keywords: *ship oscillations, forced oscillations, forces of inertia, break bulk cargo, linear models of oscillations, decoupled differential equations.*

12. CAVITATION EROSION RESEARCH ON X3CrNi13-4 STAINLESS STEEL SAMPLES WITH CUBIC/CYLINDRICAL SHAPE AND 3D DESIGN FOR NEW BRACKETS USED FOR THE CAVITATION EXPERIMENTAL STAND

[1]CHIRUS DANIEL, [2]NEDELONI MARIAN-DUMITRU, [3]CAMPIAN CONSTANTIN-VIOREL - *[1,2,3]„Eftimie Murgu" University of Resita, Romania*

ABSTRACT

This paper presents results obtained from cavitation erosion research of X3CrNi13-4 martensitic stainless steel. This steel was tested through the stationary specimen method, where was used a bracket (support) for work samples (specimens) with 4 screws. Because this bracket deteriorates the samples, three new models of brackets were designed using a CAD software (SolidWorks). These new models can be used for laboratory future research of the cavitation erosion resistance of materials.

Keywords: *cavitation erosion, X3CrNi13-4 stainless steel, CAD software, 3D brackets, design.*

13. CASE STUDY ON USE OF VIBRATIONS DIAGNOSIS IN EXPLOITATION OF QUAY CRANES

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ABSTRACT

This paper presents a case study of analysis of vibration and shock pulse carried to detect sources of faults in different points of a quay crane with mobile arm 16 t - 32 m. The analysis show that the main cause of the crane's increased engine vibration is the misalignment of the axis with the axis of the input gear reducer (misalignment of the cinematic coupling).

Keywords: *quay, port, harbour, crane, bearing, harmonics, coupling*

14. NUMERICAL SIMULATION OF THE SHORT FLEXIBLE WHEEL OF THE DOUBLE HARMONIC GEAR TRANSMISSION

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ABSTRACT

The paper presents the results of a research regarding the dynamic behaviour of the short flexible wheel of the double harmonic gear transmission, by emphasizing the stress status and the strains of its wall, in case the wheel is deformed using a mechanical wave generator with two rollers. The dynamic analysis involves modeling and the numerical simulation of flexible toothed wheel, by using the finite element method, with the help of SolidWorks Simulation program in elastic range.

Keywords: *flexible wheel, double harmonic gear transmission, simulation, stress, displacement.*

15. STUDY REGARDING THE HEAVY FUEL CONSUMPTION FOR THE MAIN ENGINE OF NAVAL POWER PLANTS

LUPCHIAN MARIANA - *"Dunarea de Jos" University of Galati, Romania*

ABSTRACT

This paper presents an analysis of exploitation parameters for naval propulsion plant at different operating regimes.

The paper presents the specific fuel consumption after the feature of propeller (full load) for a few of operating conditions analyzed.

Fuel consumption is mainly what determines the specific cost, which is actually a minimum specific fuel consumption minimum naval propulsion plant. The costs of materials, labour supply, costs of fuel (working fluids) and electricity consumption are analysed. The operation of the vessel must take into consideration the parameters for which it was designed and built, thus satisfying all the technical and economical aspects, competitiveness included.

Keywords: *oil-tanker, energetic plant, operating regime, deadweight, specific costs, ballast*

16. ALGORITHM FOR THE ANALYSIS OF TRANSPORTATION SECTOR ON ENERGY AND EXERGY BASIS

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ABSTRACT

In the international effort of achieving sustainability in transport, it is stated that transportation sector is one of the most rapidly growing energy consumer. The aim of this article is to present an algorithm for the analysis of a

transportation sector which consists of different subsectors, by the use of energy and exergy concepts in order to reveal energy efficiency of this sector.

Energy and exergy efficiencies, calculated according to the algorithm (for different period of time) are strong tools in hands of policy makers when it is aimed the improvement of this sector. Such an analysis can reveal less performant sub-sectors from a transportation sector, presented methodology allowing also the comparison of transportation sectors from different countries.

Keywords: *transportation sector, energy, exergy, efficiency*

17. A STUDY AIMING HEAT TRANSFER COEFFICIENTS ASSESSMENT IN INTERNAL COMBUSTION ENGINES

MITU DANIELA-ELENA - *Constanta Maritime University, Romania*

ABSTRACT

In the present paper has been analyzed the effect of the heat transfer coefficient on the cylinder combustion pressure. For carry out the analysis has been used a simulation model. This model has been used for the research into the influence of multiple injections on the combustion processes and products in the cylinder of slow-speed marine diesel engines. The combustion nul-dimensional mathematical model was validated by comparing the actual data measured on board a ship and the results obtained from simulations. The paper purpose is to presents the results of the heat transfer influence comparison obtained by applying formulas for the heat transfer used by Woschni, Annand and Eichelberg. The results are statistically analyzed and graphically presented.

Keywords: *heat transfer coefficient, Woschni, Annand, Eichelberg, cylinder combustion pressure.*

18. ALGORITHM FOR THE CALCULUS OF THE GEOMETRICAL CHARACTERISTICS OF THE CROSS SECTIONS BASED ON AN ANALYTICAL GEOMETRY APPROACH

[1]OANTA EMIL, [2]CONSTANTINESCU ELIODOR, [3]LAZAROIU GHEORGHE, [4]AXINTE TIBERIU, [5]DASCALESCU ANCA-ELENA - *[1,2,4]Constanta Maritime University, Romania, [3,5]'Politehnica' University of Bucharest, Romania*

ABSTRACT

The paper presents original contributions regarding the automatic calculus in structural mechanics domain. The calculus of the stresses and of the displacements requires accurate values of the geometrical characteristics of the sections. A reliable and general method to calculate the geometrical characteristics is to decompose the domain that is the cross section of the bar, in 'simple' shapes, for which there are direct calculus relations. These 'simple' shapes are either solid, or hollow. Each 'simple' shape has assigned some points where the maximum stresses may appear. For the overall cross section, there was conceived and algorithm for the 'filtration' of the points, in order to output the most relevant values of the stresses, meaningful for a structural analyst. Until now, there was developed an algorithm and an original software consisting of more than 9000 computer code lines which considered as 'simple' shapes rectangles and circles. The paper presents the mathematical background and algorithm which, together with rectangles and circles, also considers a triangle as a 'simple' shape. In this way complex shapes may be triangularized and the method may be extensively applied. This general algorithm has several strong points: simple, reliable, always convergent, fast, and potential to increase the accuracy.

Keywords: *Boolean algebra, domain decomposition method, original algorithm, knowledge integration.*

19. IDEAS REGARDING THE MATHEMATICAL BACKGROUND OF THE ANALYTIC MODELS BASED ON THE STRENGHT OF MATERIALS THEORY

[1]OANTA EMIL, [2]CONSTANTINESCU ELIODOR, [3]LAZAROIU GHEORGHE, [4]AXINTE TIBERIU, [5]DASCALESCU ANCA-ELENA - *[1,2,4]Constanta Maritime University, Romania, [3,5]'Politehnica' University of Bucharest, Romania*

ABSTRACT

The paper presents some of the basic notions from mathematics which are widely used in the strength of materials theory. Beside the mathematical background, for each mathematical solution the paper presents the technical problems

solved in strength of materials and the according original computing methods conceived along the time. The mathematical background is useful in the development of the analytic models and methods, widely used in the computer aided engineering. In this way, the pre-dimensioning of the mechanical parts may be done by the use of some original computing instruments based on analytic models and then studied by the use of the modern computer aided engineering technologies. The mathematical background, together with the numerical methods solutions may be used to solve problems above the classic hypotheses of the strength of materials discipline. To conclude, the paper synthesize information from several academic disciplines: strength of materials, mathematics, numerical methods, theory of elasticity, computer science, this knowledge integration strategy being useful to expand the limits of the classic theory and to create modern calculus instruments for structural problems.

Keywords: *mathematics, hypothesis, strength of materials rules, knowledge integration.*

20. A SURVEY OF DEVELOPMENTS IN WAVE ENERGY

SCURTU IONUT-CRISTIAN - *Constanta Maritime University, Romania*

ABSTRACT

This paper presents few projects that are available today in sea trials and that are already connected to the grid. The energy harvested from waves is clean and should be used on a higher scale around the globe. The huge ocean surface can generate enough power to cover all our needs. Also for a point absorber I plotted with Ansys Fluent the heave motion. All details from the diagram can give us valuable information about speeds and accelerations in point absorbers.

Keywords: *Wave energy, Aquabuoy, Wave Dragon, Wave Star, Pelamis, Ansys, point absorber heave.*

21. ATTENUATION OF NOISE PRODUCED BY BANDCONVEYORS IN CAREER OF LIGNITE FROM THE COAL BASIN OF OLTENIA

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ABSTRACT

Sources of noise may come from urban transport, areas or objects which are large gatherings of people or industrial areas. Rate setting for the urbane noise is to protect the community from excessive noise action. The main source of noise for inhabited areas near the careers of Oltenia are the bandconveyors of the type 1000 – 1400 - 1600 – 1800 – 2000 -2250 mm. One way to combat noise produced by the bandconveyors is the use of curved screens from soundproofing materials. Choice of the dimensions for the curved screens depends on the noise level and the system characteristics that determine noise. In this paper we determined the attenuation produced of the curved screens of polycarbonate which can be used for attenuation of noise from the bandconveyors.

Keywords: *pollution, noise control, noise attenuation.*

22. THE DRAG REDUCTION BY DIMINISHING THE COEFFICIENT OF FRICTION BETWEEN THE WATER AND THE HULL, BY BLOWING AIR UNDER THE SHIP

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ABSTRACT

Through this paper we intend to approach a line of research that can be explored to determine the pressure increase due submission ship or small displacement vessels, the vessel required speed would come in classic mode regime hull wetted hull oiled air MALS method (The Mitsubishi Air Lubrication System).

Keywords: *ship, coefficient of friction, blowing air, propulsion.*

SECTION III – ELECTRONICS, ELECTRONICAL ENGINEERING AND COMPUTER SCIENCE

23. DESIGN OF THE AMPLIFIER STAGE PHASE SHIFTER USING ELECTRONIK WORKBENCH SOFTWARE

[1]ANGHEL-DRUGARIN CORNELIA-VICTORIA, [2]DRAGHICI SILVIU - *Eftimie Murgu University of Reşiţa, Faculty of Engineering and Management, Department Electrical Engineering and Informatics, Romania*

ABSTRACT

The article made the design and study of the amplifier stage phase shifter using Electronic Workbench software. This program is a Computer Aided Design, is a more upgraded P-Spice software package. It is very useful in the study of electronic circuits, both analog and digital, with rich libraries and allowing a wide range of circuit simulations. Stage-phase shifter the amplifier or distributed task is able to provide two output signals identical in amplitude and opposite phases, facilitating the replacement transformer with median link, which is very costly to set up, heavy, occupy much space is expensive as manufacturing technology. This aspect is taken into consideration even in naval electrical engineering, where there are many transformers, some of them even with several outlets in the secondary circuit. The proposed scheme will work in small signals (Class A), a few tens of millivolts and low frequencies. As active element will use an NPN bipolar transistor BC 107 type.

Keywords: *amplifier circuitry design, stage phase, distributed task, transformer with center tap, polarization, transformer with median link, Electronic Workbench software.*

24. STEGANOGRAPHY AND CRYPTOGRAPHY ON MOBILE PLATFORMS

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ABSTRACT

This paper presents a new solution in order to provide confidentiality of digital data that is transferred through today's available platforms for communication. Our project is to create a set of applications that will use steganography and cryptography to transfer digital information, in a secure manner, on different mobile platforms. Whatever the device used (computer, smart phone, tablet), the user will be able to share secret information through Internet and Mobile Networks.

At this stage of the project, the application called SmartSteg works on Android platform using a sort of LSB steganography and is able to hide and rapidly encrypt large files.

Keywords: *SmartSteg, Steganography, LSB, cryptography, Android.*

25. AORTIC ANEURYSMS AND AORTIC DISSECTION IDENTIFICATION USING IMAGE SEGMENTATION WITH MATLAB

[1]COROESCU MIRELA-MARIA, [2]COROESCU TIBERIU - *[1]SANA Medical Center Bucharest, Romania, [2]University OVIDIUS of Constanta, Department of Physics and Applied Electronics, Romania*

ABSTRACT

This paper analyzes the large application possibilities and opportunities offered in medical imaging by image segmentation to identify aortic aneurysms in general and especially aortic dissection. For effective segmentation of images acquired using the implementation of thresholding techniques was used MATLAB application, with which it was possible the design, implementation and testing of a new graphical user interface through integrated development environment GUIDE. This new GUI is friendly and easy to use, making segmentation in mono, multi and fuzzy modes, for images acquired by any of the current imaging methods for the investigation of aortic aneurysm.

Keywords: *Aortic dissection identification, medical images processing and segmentation, graphical user interface GUI, Matlab applications.*

26. CONSIDERATIONS AND CONTRIBUTIONS TO THE IMPROVEMENT OF TRANSMISSION LINES PERFORMANCES

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ABSTRACT

The purpose of our paper is to explain why apparently identical constructions of the antenna and transmission line behave differently, and to offer information on how the transmission line must be dimensioned so that the energy transfer towards the antenna is maximum. We have shown above that the rule of the integer multiple of $\lambda_{linie}/2$ applies only for one frequency from the many frequencies of a band in which radio emission is performed, frequency on which the antenna is actually set. For other frequencies appear two sources of un-adjustment: the antenna is no longer supplied to the frequency on which it is set, and besides the active component of its impedance there are other reactive (capacitive for lower frequencies and inductive for higher frequencies, as compared to the tuning frequency), and the length of the line does not comprise an integer number of semi waves of the operating frequency. To see how important the impact of the alteration is we can use the relations on any available medium, including Microsoft Excel. I preferred Delphi 7, with which I got the following results which will be analyzed.

Keywords: *Transmission lines, impedance matching, line length, power factor.*

27. ANTENNA DESIGN CONCEPTS

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ABSTRACT

The paper presents the results get from determination of antenna's main characteristics such as impedances and radiation diagrams using original applications of MECMET research center from "Dunarea de Jos" University from Galati, based on Delphi soft. The final results allow us to obtain the corect dimensions of antennas so that the radiation resistances of radiant field to be eliminate and so to improve antenna's efficiency.

Keywords: *Antenna, impedance, radiation resistances, radiation fields.*

28. THE INFLUENCE OF FRICTION FACTOR VARIATIONS ON THE OUPUT PERFORMANCES OF AN INTEGRATED COGENERATION SYSTEM EQUIPED WITH DOUBLE FED INDUCTION GENERATOR

[1]PARASCHIV ION, [2]COSTIN MADALIN, [3]VONCILA ION, [4]FETECAU GRIGORE - [1, 2, 3, 4]*"Dunarea de Jos", University of Galati, Romania*

ABSTRACT

In the paper has been studied the influence of friction factor of Stirling engine on the response of double fed induction machine in terms of active and reactive power, currents, speed and torque. The complex mathematical model of the analysed integrated system has been implemented in Matlab – Simulink simulation environment. Due to the fact that Stirling engine speed is very sensitive on friction factor variations, the systems equipped with double feed induction generator has a great benefit related by the possibility to operate in both situation as hyper synchronous and hippo synchronous regimes and, thus, the integrated cogeneration system may operate in adequate range of speed.

Keywords: *friction factor, double feed induction generator, optimization, Stirling engine, cogeneration system.*

29. OBJECT DETECTION USING HOUGH TRANSFORM

[1]TODORUT CLAUDIU-ADRIAN, [2]ARDELEAN FLORIN-TRAIAN - *[1,2]Technical University of Cluj-Napoca, Romania*

ABSTRACT

In this paper an implementation is presented for object detection using Hough transform which is superior to other methods. By implementing this algorithm it is detected objects of various forms: lines and circles.

Keywords: *Object recognition, Hough transform, Sobel operator*

SECTION IV – MATHEMATICAL SCIENCES AND PHYSICS

30 IMPULSIVE SYNCHRONIZATION OF DISCRETE-TIME CHAOTIC SYSTEMS VIA PECORA - CARROLL TECHNIQUE

DELEANU DUMITRU - *Constanta Maritime University, Romania*

ABSTRACT

In the paper the impulsive synchronization of discrete-time chaotic systems is analyzed and simulated using Pecora - Carroll method and Matlab programs. Practical schemes and criteria are discussed and applied to typical chaotic systems as Burgers map, Gumowski-Mira map and Rossler discrete hyper-chaotic attractor. Numerical simulations show the effectiveness of the proposed techniques.

Keywords: *Impulsive synchronization, Pecora-Carroll technique, discrete-time chaotic system.*

31. 'A NEW KIND OF SCIENCE': STEPHEN WOLFRAM'S PARADIGMS FOR A NEW BEGINNING OF MATHEMATICS

HALALAE IOAN - *„Eftimie Murgu" University of Resita, Romania*

ABSTRACT

"Cellular automata (CA) have been known since John von Neumann investigated them in his search for self-reproducing systems." [1]. After more than 50 years of being treated more as a curiosity, CA became, in the last decade, a major instrument in the universe of mathematics models users. Although the number of field of applications is continually growing, CA are far from being well integrated in metamathematics.

'A new Kind of Science' (NKOS) by Stephen Wolfram [2] is the only book aiming the presentation of CA as paradigm. Due to the fertility of the ideas, the book deserves a special attention. The major problem of the book is the rather confuse presentation of the ideas: exclusively visual argumentations and a very dispersed presentation of the themes. In the present paper we realize a synthesis of the topics and problems and also offer a concrete solution for projects using CA.

Keywords: *Cellular Automata, 'A new Kind of Science', Stephen Wolfram, simple programs, the Principle of Computational Equivalence, Perception and Complexity*

32. COMPARATIVE STUDY OF PHOSPHATE REMOVAL FROM WASTEWATER IN WASTEWATER TREATMENT PLANT OF CONSTANTA COUNTY

[1]ZAGAN SABINA, [2]MUSAT FLORENTINA - *[1]Constanta Maritime University, [2]Technical University of Civil Engineering Bucharest, Romania*

ABSTRACT

The purpose of this paper is to asses the degree of phosphate removal from wastewaters with different organic loads in wastewater treatment plants, using similar technologies. These treatments plants are located in Constanta

County. To establish phosphate removal efficiency, a series of physico-chemical parameters were determined and analyzed for wastewaters treated in sewage treatment plants and have established a number of correlations between parameters obtained from analysis.

Keywords: *wastewater treatment, phosphorus, effciency, treatability.*

33. STUDIES ON ION EXCHANGER EFFICIENCY IN WASTEWATER PHOSPHORUS REMOVAL

[1]ZAGAN SABINA, [2]MUSAT FLORENTINA - *[1]Constanta Maritime University, [2]Technical University of Civil Engineering Bucharest, Romania*

ABSTRACT

This article aims to study the use of ions exchange resins in wastewater phosphorus removal, following the current trend of replacing traditional chemical methods, using ferric salts. In this respect, the paper presents a series of physico-chemical analyzes [1-4] for wastewater samples, passed through ion exchanger resins mini-columns, for wastewater phosphorus removal. Ion exchanger resins in this experiment, are not curently used especially for phosphorus removal, are strong base anion macroporous type I, designed for use as an organic filter (scavanger) for removal of water-soluble complex organic materials of medium to high molecular weight, respectively for nitrate removal, even in the presence of high sulfates concentrations. The obtained data shows that these polymers have the ability to retain in a high proportion, the phosphorus from the wastewater, obtaining a good efficiency of this process.

Keywords: *wastewater, phosphorus, ions exchange, synthetic polymers.*

SECTION V – ENGLISH FOR SPECIFIC PURPOSES

34. ENGLISH AS A PRE-CONDITION FOR INTERNATIONAL STUDENT MOBILITIES? EILC as an alternative.

NEN MADLENA - *Military Technical Academy of Bucharest, Bucharest, Romania*

ABSTRACT

Every year, host universities participating in Erasmus programme organize Erasmus Intensive Language Courses in order to help incoming students to interact with the other students and to integrate into the academic life. The language courses were designed to help students communicate in everyday life, to understand the language used by the media, to perform academic activities and to develop cultural awareness. On top of presumably universal English language, EILC greatly facilitates students' access on the labor market, in an increasingly globalized world based upon multi-culture.

Keywords: *Erasmus students, human resources, inter-culturality, linguistic barriers.*

SECTION VI - TRANSPORT ECONOMICS

35. IMPLICATIONS OF THE BILL OF LADING USAGE IN THE PROCESS OF GOODS TRANSPORTATION BY SEA

ADASCALITEI OANA - *Constanta Maritime University, Romania*

ABSTRACT

The article proposes an analysis of the most important document in the commercial transport of goods by sea i.e. the bill of lading. The multiple functions performed by this document are represented as follows: the bill of lading is a receipt for the goods delivered, it is the clear evidence regarding the terms covered by the contract of carriage and it is a document of title. By means of its functions, one obtains the analysis of the relationships between shipper/charterer-

carrier-consignee and in some cases, endorsee, types of bill of lading and their probative value, the relationship between charter contract and the bill of lading and finally, the conditions to be met so that the bill should be considered a document of title.

Keywords: *bill of lading; receipt; evidence; document of title; contract of carriage;*

36. EXCLUSIVE ECONOMIC ZONE – THE CONCEPT OF *SUIS GENERIS* AREA AND ITS IMPLICATIONS FOR THE LEGAL ORDER OF THE SEAS

ADASCALITEI OANA - *Constanta Maritime University, Romania*

ABSTRACT

The Exclusive Economic Zone combines features of the high seas and the territorial sea which gives it a unique character among other maritime territories regulated by the United Nations Convention on the Law of the Sea. Finding a balance between coastal State and third states rights, reflects the very legal nature of this *suis generis* area as it is recognised by the international law. The article aims at analysing the provisions of the Convention in an attempt to understand the actual tendency to disrupt the legal order in this area.

Keywords: *Exclusive Economic Zone; coastal states rights; third states rights; UNCLOS; military activities*

37. A NEW APPROACH FOR THE RENTAL RATE EVALUATION IN A PORT

BALUT LUCIAN - *Constanta Maritime University, Romania*

ABSTRACT

The work presents a new approach of the method of determining the rental rent for the land in a port. According to this approach, the final rental rate must be dependent on how the port operator meets certain efficiency clauses (traffic clauses, performance clauses, consume clauses, environment clauses etc.). In the same time techniques of subsiding or adjusting the rate are introduced depending on the level of implementation of the efficiency clauses.

Keywords: *Rental rates in ports.*

38. ANALYSIS OF THE INTERACTION BETWEEN CAPESIZE AND PANAMAX FREIGHT MARKETS

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ABSTRACT

Without the dry bulk shipping market, world trade, industry and our current lifestyles could not be maintained. The dry bulk market is very dynamic due to interactions of its various components. The purpose of this study is to analyze the linkages between the Capesize market segment and the Panamax market segment in order to understand the price mechanism and the behavior of market participants.

Keywords: *Capesize, Panamax, VAR models, dry bulk shipping*

39. AN EMPIRICAL ANALYSIS OF BIDIRECTIONAL RELATIONSHIPS BETWEEN VARIOUS COMPONENTS OF BALTIC SUPRAMAX INDEX

[1]BATRINCA GHIORGHE, [2]COJANU GIANINA, [3]SURUGIU IOANA - *[1,2,3]Constanta Maritime University, Romania*

ABSTRACT

In shipping, the freight market represents the adjustment mechanism linking supply and demand. Most of the times, the time charter level is a consequence of the equilibrium between demand and supply of ships in the area, but there are also situations when the market raises significantly in an area and, as a consequence, vessels situated at a shorter or a

longer distance from that area are ballasting toward the hot area, shattering the equilibrium. The purpose of this study is to assess the bidirectional relationships between various components of Baltic Supramax Index by applying vector autoregressive models.

Keywords: *Baltic Supramax Index, shipping demand, shipping supply, VAR models*

40. APPLICATION OF AUTOREGRESSIVE MODELS FOR FORECASTING THE BALTIC EXCHANGE DRY INDEX

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ABSTRACT

The shipping industry has been growing rapidly from year to year and until not too long ago, shipping was both the greatest beneficiary and hammering pulse of globalization. But now the global economic and financial crisis has multiplied the problems of shipping industry, generating a high volatility of prices. In this context, it becomes imperious to analyze and estimate the dynamics of various indices that could be useful to capture market volatility in real time. In this respect, the Baltic Dry Index is considered to be a leading indicator of economic activity reflecting global demand for raw materials, representing a reliable and independent source of information.

Keywords: *Baltic Dry Index, shipping, volatility, shipping demand, autoregressive.*

41. SUSTAINABLE CONSUMPTION IN THE AREA OF TRANSPORTATION

BRANZA GRATIELA - *Constanta Maritime University, Romania*

ABSTRACT

In the context in which sustainable development is one of the key objectives of the European Union, the need to develop and evolve towards more sustainable consumption and production patterns is a priority. Due to the fact that in the European Union and in the world the consumption sector related to food, housing and transport represents between 70% to 80% of all environmental impacts, promoting sustainable consumption is extremely important to limit negative environmental and social externalities as well as to provide markets for sustainable products. This paper captures some aspects regarding the definition of sustainable consumption and guidelines in the sphere of education for sustainable consumption. The paper also presents some good practice examples of sustainable consumption in the field of transportation and an efficient tool to measure consumer behaviour in the area of sustainable consumption in transportation – Greendex score.

Keywords: *sustainable, sustainable consumption, education, transportation, consumer, Greendex survey, sustainable behaviour*

42. ANALYSIS OF TRANSPORT'S EXTERNAL COSTS IN THE EUROPEAN UNION

BRANZA GRATIELA - *Constanta Maritime University, Romania*

ABSTRACT

Pricing in transport is a complex process that depends mainly on costs. Before the promotion of sustainable development concept in every area of activity, the environmental costs were not being considered and included in transport pricing. But, for many years European Commission have taken these costs into account and sustained the internalisation of external cost in transport as an essential purpose in order to obtain fair and efficient pricing in the field of transportation. The present paper stresses the importance of external costs in transport sector and analysis this component of transport price in the case of every transport modes, especially in maritime shipping.

Keywords: *external costs, European Union, internalisation of external costs, road, rail, inland navigation, aviation, maritime shipping.*

43. MARKETING RESEARCH ON STUDENTS' PERCEPTION REGARDING ECONOMIC ENGINEERING IN TRANSPORTS SPECIALIZATION

[1]CRISTEA VIORELA- GEORGIANA, [2]OLTEANU ANA- CORNELIA, [3]SURUGIU IOANA - *[1,2,3]Constanta Maritime University, Romania*

ABSTRACT

This research aims to analyze the students' perception over their faculty, Faculty of Navigation and Naval Transport, regarding Economic Engineering in Transports specialization from Constanta Maritime University. This research aims to highlight the students' view about the way their faculty is being perceived. Also, this research aims to analyze the differences between those from Economic Engineering in Transports and those from other faculties within Constanta Maritime University. Another objective of this study case is to reduce uncertainty over the management's marketing behavior because it provides information about college students regarding their attitudes, opinions and behavior. The research technique used in this project is based on a questionnaire survey method.

Keywords: *questionnaire, education, Economic Engineering in Transports, students.*

44. INITIAL PUBLIC OFFERS' IMPORTANCE IN FINANCING SHIPPING COMPANIES. CASE STUDY ON SCORPIO TANKERS INC

[1]CRISTEA VIORELA-GEORGIANA, [2]SURUGIU FELICIA, [3]SURUGIU IOANA - *[1,2,3]Constanta Maritime University, Romania*

ABSTRACT

In the shipping industry there is a dynamic business environment which determines shipping companies to get some other financial resources in order to maintain and develop on this market. Through this paper we want to establish the important role of the initial public offers on the stock market, from the different geographically regions; the probability that these offers might determine the success or failure of a company and the way of this financing process could be made by a company which needs resources for development and surviving on such unstable market, as the maritime market is. In order to show how the initial public offers work on the stock market we took an example of a maritime company, Scorpio Tankers Inc., whose shares are listed on New York Stock Exchange, from 2010.

Keywords: *Public offer, shares, transaction, underwriting spread, New York Stock Exchange.*

45. THE GEO-STRATEGIC AND GEO-POLITICAL SITUATION OF THE CAUCASUS AND THE BLACK SEA REGION AT THE BEGINING OF XXI CENTURY

[1]GEORGESCU STEFAN, [2]ZELHA ALTINKAYA, [3]DRAGAN CRISTIAN - *[1,3]Constanta Maritime University, Romania, [2]Istanbul AYDIN University, Turkey*

ABSTRACT

Historians' opinion is unanimous in considering that the Cold War was a war between the two dominant political and social systems: capitalism and socialism.

In fact, this war ended with the collapse of communism in the former Soviet Union. With the USSR a crucial geopolitical pole disappeared from the Pontic area and more than ten independent states occurred - Ukraine, Georgia, Lithuania, Latvia, Estonia, Kazakhstan, Armenia, Azerbaijan, etc. - involved in regional and international structures different in interests, orientations and forces, and some still dependent on Moscow, to a lesser or greater extent.

Naturally, the effects of this phenomenon have been passed on the Pontic basin. The Cold War at the beginning of the last decade of the last century, turned the Black Sea into a sum of states, of threats and interests, a phenomenon that profoundly altered the geopolitical reality of this space.

In the Black Sea region, with a vast economic and purchasing potential, live over 325 million inhabitants, which makes it become a huge market, still unsaturated, attractive for investments in various areas of cooperation, such as: transport, communications energy, tourism, etc. This region is endowed with all *energy sources*: oil, natural gas, coal, minerals, wood, etc., representing, in economic terms, a *significant economic force*.

The Black Sea region has considerable potential deriving from geographical location and common history. Reform and structural adjustment processes, geographical proximity and transport facilities along the Black Sea coast bring it in the heart of Europe and give it incomparable advantages over other regions.

The Black Sea basin has a high potential for the expansion of trade from the Urals to the Danube. Due to the favorable location, regional markets can be relatively easily integrated in the large markets in Europe, Central Asia and the Middle East.

Keywords: *Cold War, Black Sea, Wider Black Sea, Danube , Geopolitichal*

46. ECONOMIC ASPECTS OF HEALTH AND SAFETY AT WORK

GHEORGHE LUCIAN - Ovidius University of Constanta, Romania

ABSTRACT

Safety and health at work is a set of activities aimed at providing the best working conditions, protection of life, health, physical and mental integrity of workers. The purpose of health and safety legislation in the Romanian labor is the relative risk reduction in the life, health or physical integrity of the rendering work.

They contribute to the achievement of the various branches of law provisions.

The main regulation is contained in Law no. 319/2006 on health and safety. Health and safety at work of Romanian workers are protected to the same extent as that of European workers in legally, with the entry into force of Law no 319/2006 on health and safety, rules for the application of its transposing directives in the field.

Important to note about the Romanian legislation on safety and health at work is that it is in a permanent process of transformation in order to harmonize with EU directives in this area.

Keywords: *health, safety, organization*

47. CONTRACT MANAGEMENT - NEWS OR DISUSE?

GHEORGHE LUCIAN -Ovidius University of Constanta, Romania

ABSTRACT

In a world in constant change, the inertia generated by the function of leadership is sometimes more expensive than the change itself, whatever national origin would be. Currently, Romania has reached a point where the market economy depends to a large extent on how the activities are organized into an entity, organizational management and attitude change. Ferment market economy is the innovative ideas and managers think and act in new directions.

Of course, Romanian managers have the creativity needed to transition, but for its manifestation, it takes a release of intellectual impulses of the former type of a centralized leadership. Performance is a result of the operation of an organization, a consequence of the driving task. It reflects the degree to which the manager went to meet the objectives and performance criteria which were firmly committed by signing a contract to this effect. Performance can be measured both quantitatively by comparing quantifiable as those imposed by contract and in terms of quality, which involves a dose of subjectivity on the part of welcomes.

Keywords: *management, contract, manager, organization*

48. FUTURE TRENDS IN SUPPLY CHAIN EVOLUTION AND INFLUENCES ON THE TRANSPORTS

IORDANOAIA FLORIN - *Constanta Maritime University, Romania*

ABSTRACT

The transports now have are a number of difficult problems, from those related to the lack of customers, high cost of fuel, taxes, environmental pollution. In this case transport companies must follow and understand the evolution of logistics and supply chain, for to be part of these organizations. In this paper are presented some aspects of the changes that will affect future transports.

Keywords: *supply chain, logistics, transportation, trends.*

49. DIFFERENT WAYS OF ANALYSING THE EFFECTS OF PUBLIC-PRIVATE PARTNERSHIP IN ORGANIZING PUBLIC SERVICES

[1]MINA SIMONA, [2]SURUGIU IOANA - *[1,2]Maritime University Constanta, Romania*

ABSTRACT

Public-private partnership has been presented as an opportunity to improve the input and output legitimacy of global environmental governance. Functional decentralization can generate a considerable improvement in the quality of life of the population and in the functioning of a city and its services. We reported in this paper some conclusions regarding externalisation, public-private partnership and improving the quality of life of the correct organizing of public services. We exemplified the well practice examples from Canadian Experience, Northern Europe Experience, UK private sector participation in Governance, and the Romanian case. After an important qualitative analyse of all these results we established if the New Public Management ideas are correct, or not. Some of the results contradict the New Public Management ideas: mainly that private sector participation through public-private partnerships in the delivery of public services will inevitably lead to a better use of scarce resources, and consequentially to lower user prices and higher quality goods and services. Our empirical analysis demonstrates that user prices have a stronger relationship with the organizational costs than with property or the adopted management model in the delivery of public services. The article offers a view of understanding that any solution to rebalancing budgets and world markets or to improving jobs and incomes will involve the public sector will be key issues for all comparative political economists studying the fundamental conflicts over income, equality and jobs in the years to come.

Keywords: *decentralization, public services, public-private partnership, performance*

50. THE EUROPEAN DIMENSION IN EDUCATION. SOCIAL POLICY OF THE EUROPEAN UNION

NEN MADLENA - *Military Technical Academy of Bucharest, Bucharest, Romania*

ABSTRACT

Literature in public policies "revolves" around terms of decentralization and subsumed concepts (privatization, implementation of market mechanisms, contracting, etc.). In this work I analyzed a type of public policy, proposed at a "centralized" level as a European Community policy is coordinated by supranational institutions.

In this context, I refer to how evolved the approach of public policies in education at EU level, in terms of theoretical models operating in the public policy decision-making process and I also refer to some milestones of social policy of the European Union. The transition to a market economy has influenced, powerfully, the employment level of the population in terms of volume and structure, as determined the adaptation labour market policies, in parallel with the process of institutional reform.

Under the conditions of speed-up restructuring and increasing insecurity of the job, the labour market has accumulated a great number of social problems.

Keywords: *public policy, European dimension, social policy, .*

51. STATE REGULATION ISSUES OF INTERMEDIARY ACTIVITY OF CUSTOMS BROKERS IN UKRAINE

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ABSTRACT

Regulatory influence in the sphere of service provision of customs affairs' business activity is reviewed in the article; the problem of structural change in customs authority, creation of conditions for foreign-economic activity and transfer of such activity's control function to Ministry of revenues and duties of Ukraine aiming at public interest protection; state regulation of customs intermediary's activity and enhancing control of intermediary activity in the

customs affair branch, using effective measures to increase responsibility of intermediary enterprises for compliance with requirements of regulatory acts of Ukraine.

The importance of regulatory influence to customs intermediaries' activity, necessity of its transformation in conditions of general raise of foreign-economic activity effectiveness of market entities and state entities in whole are proved.

Keywords: *intermediary service, customs intermediary, customs affair, regulatory activity, customs broker.*

52. THE QUALITY OF CORPORATE GOVERNANCE

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ABSTRACT

The corporatist governing is the system based on which institutions are ruled and controlled. The corporatist administration implies a set of relations between the leaders of an institution, the unions and the economic agents. The corporatist administration also offers the structure according to which the goals of the institution are established, as well as the means to reach those goals and to monitor the gained performances. A good corporatist administration should offer the motivation to achieve the goals which are in the best interest of the institution and the tax payers and should also facilitate an efficient monitoring, thus encouraging the institutions to use the resources sufficiently.

The transparency and permanent informing are the main issues when talking about a real corporatist administration. These allow the unions as well as economic agents to assess the performances of the management with influence over their behaviour. Moreover, the information systems can form managers which will have access to more means so as to rule more efficiently. Last but not least, the transparency and providing information offer the tax payers the opportunity to understand the structure of the institution, its activities and policies so that he can understand the performances and ethical standards on which it is based.

Keywords: *corporate governance, internal audit, development, decisions, performance, management.*

53. LEGAL PROTECTION SYSTEM OF NAVIGATION IN ROMANIA

POPA GEORGE-DOREL - *"OVIDIUS" University of Constanta, Romania*

ABSTRACT

Maritime navigation safety is a key element in the development of maritime transport of goods and passengers. For this reason, the Romanian authorities give high priority to the rules applicable to maritime transport. The Romanian state has granted permanent attention to this area taking into account the goals and principles of the United Nations concerning the maintenance of international peace and security, developing friendly relations and cooperation among states. Romania took into account international treaties preventing and combating acts of terrorism and those who threaten or destroy innocent human lives, jeopardize fundamental freedoms and seriously undermine the dignity of persons. The Romanian state started from premises that unlawful acts against the safety of maritime navigation jeopardize the safety of persons and property. Moreover, failure to obey the rules seriously affects the operation of maritime services and undermines the confidence of the people in safe maritime navigation.

Keywords: *Ship, Maritime safety, Crime, Punishment, Romanian law.*

54. EUROPEAN MARITIME SAFETY AGENCY

POPA GEORGE-DOREL - *"Ovidius" University of Constanta, Romania*

ABSTRACT

This European Agency has been established in 2002 through Regulation (EC) no 1406/2002 of the European Parliament and of the European Council. The main mission of European Maritime Safety Agency is to prevent and combat the risk of maritime accidents, maritime pollution from ships and to prevent the loss of human life during the navigation. This agency represents the technical institution providing the European Union with the necessary means to enhance maritime safety and to prevent and combat ship pollution. European Maritime Safety Agency should assist the

European Commission in developing European Union legislation in the area of navigation safety and prevention of pollution by vessels. E.M.S.A. should provide the necessary support to ensure the implementation of European legislation in this area by assisting the European Commission. European Maritime Safety Agency is performing the tasks assigned by the European Union legislation on navigation safety and prevention of the vessels pollution.

Keywords: *Vessels, Maritime safety, European Union, Maritime pollution.*

55. TAX HAVENS AND THE TERRORISM

POPA GEORGE-DOREL - *"Ovidius" University of Constanta, Romania*

ABSTRACT

In everyday language the term "tax haven" means economic and geographical area that offers a wide range of tax benefits where so called offshore companies are registered and carry on financial activities related to money laundering. Basically, an offshore company could operate under conditions of favorable tax only if it is recorded in a "tax haven." Using those companies situated in "tax havens", today, billons of US dollars are "recycled" in complicated financial operations supported by well-organized mechanisms and then, after "the black money" having origin in organized crime activities are reinserted in the legal economy and very often used to finance the terrorism.

Keywords: *tax heaven, organized crime, money laundering, offshore company.*

56. CHANGING OPTIMAL PRODUCTION VOLUME IN CONDITIONS OF INTERNATIONAL ECONOMIC INTEGRATION

SHPAK NATALIYA - *Odessa National Maritime University, Ukraine*

ABSTRACT

The objective of this article is to reveal expediency of launching customs unions in the international economic system and to ascertain the indicators, above all influenced by presence of customs barriers between countries.

Keywords: *international economic integration, supply volume, national producer, foreign producer.*

57. ASPECTS RELATED TO RISK MANAGEMENT IN OIL AND GAS INDUSTRY

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ABSTRACT

The presence of risk in almost every human situation, activity and sector has determined the increasingly rapid development of the risk management discipline. Depending on the context, there are various descriptions of what risk management involves. Like in many other industries, oil and gas companies are facing many kinds of risks and uncertainties that make the execution of projects more and more complex and difficult. Taking into consideration the fact that in risk evaluation and treatment the potential impact is a key issue the oil and gas industry is one of the fields where addressing risks will remain one of the major concerns in order to assure the limitation of human life and environmental damages.

Keywords: *risk management, risk evaluation, oil and gas industry*

58. MONITORING SEAFARERS' COGNITIVE PERFORMANCE UNDER STRESSOR FACTORS DURING A VOYAGE BY AUTOMATED NEUROPSYCHOLOGICAL ASSESSMENT METRICS

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ABSTRACT

Cognitive science is a multidisciplinary science area that identifies the mental processes by checkout the actions of mind and intelligence through understanding the dynamics of interactions between them. In this study, based on the definition of cognitive science, the effect of cognition of the seafarers during the operational processes are evaluated under certain stressor factors such as fatigue-sleepiness, noise and thermal strain. Research was conducted on the bridge and engine room during the voyage of a short route container vessel. Test results showed that, (a) the cognitive tests performance and the reaction response times decline through fatigue and sleepiness during the watchkeeping period (b) increasing temperature and noise causes to decline the reaction time and the cognitive performance.

Keywords: *Seafarer, cognitive performance, stressor factor*

59. TRANSPORTATION SYSTEM DEVELOPMENT MODELING SUBJECT TO CUSTOMS CONTROL OF CARGO FLOWS

VARVARA PITERSKAYA - *Odessa National Maritime University, Ukraine*

ABSTRACT

The article is dedicated to the elaboration of the model for predicting transportation volumes taking into account the influence of customs control on the process of cargo transportation. The use of the above-mentioned method based on situational approach to prognostication ensures a high level of the forecasts adequacy required for the analysis and solution of the tasks of the transportation system development.

Keywords: *transportation system, cargo flow, customs control.*

60. GLOBAL CRISIS, CHANGE IN OIL PRICES AND ITS EFFECTS ON TURKISH EXPORT

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ABSTRACT

In the fourth year of great global crisis, many leading pessimists economist have been forecasting deeper economic crises with low growth rates. The sharp foreign exchange volatility was one of the main reasons of the financial crisis in the earlier years of last century and till 2007, however, this time crisis emerged in housing and especially in mortgage market in the USA. It spill over to the other markets and other countries later. Although, Turkish economy was very sensitive to the volatility of foreign exchange for many decades and experienced many crises due to sharp volatility of foreign exchange within last 30 years, Turkish economy followed high growth rates during the last four years. It would not be possible to follow high growth rates, high export opportunities in coming years. In this paper, the volatility of exchange rates and its effects on Turkish Economy will be analysed by wavelet methods.

Keywords: *oil, price, Turkish Economy, price*