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OVERWEIGHT CONTAINERS, A SERIOUS THREAT TO SHIPS SAFETY

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ABSTRACT

The problem of overweight containers becomes a major concern of the maritime community. Huge number of containers are damaged and /or lost overboard every year as a result of stow collapse due to overweight containers. Apart from that, this problem affects in a dangerous way the safety of ships by affecting the ships intact stability. The maritime industry efforts continue to find a possible solving problem solution in order to prevent accidents but the problem still remained open. This paper presents the risks involved in overweight containers and the impact of this problem on the maritime safety and safety of ships.

Keywords: *containers, overweight, containership, safety, ship stability, maritime*.

CARRIAGE OF SCRAP METAL IN BULK A HIDDEN RISK SERIOUSLY AFFECTING THE SHIP STABILITY

ANDREI CRISTIAN

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ABSTRACT

The present paper presents the problems which arise from the transport of scrap metal in bulk on board vessels. Risks and factors involved in such transports, as well as proprieties of cargo and assessment of ship's stability, have to be correctly evaluated by all parties involved. A recent maritime casualty, related to loss of stability and sinking of vessel, revealed the hidden risks in this matter.

Keywords: *scrap metal, ship stability, stowage factor, centre of gravity.*

FACTORS AND TRENDS THAT INFLUENCE THE GLOBAL INTEGRATED TRANSPORT SYSTEM

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ABSTRACT

Multimodalism is not a current concept; it has been used in the human history ever since the beginning of diversification of transportation phase. Along with the expansion of transportation networks, the interlinking and integration of all these networks in a global transport network, the multimodal transport systems, allowed the access in almost all the points from the surface of the Earth in which there are human communities.

The process of globalization had as a consequence the creation of a worldwide global integrated transport system, a system that is permanently influenced by the evolution of the regional commercial markets.

Keywords: *globalization,global integrated transport system, multimodalism, intermodalism, trends.*

ASPECTS OF THE MARITIME TRANSPORT EVOLUTION DURING THE MIDDLE AGES

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ABSTRACT

The evolution of the naval transports during history has not been a linear one, not even a unidirectional one. It has been characterized by moments of isolated development or of downfall, by a non-uniform growth of the transport markets and most of the times there is no sufficient data that attests every transited step.

Generally, the evolution of the naval transports has been a concomitant process with the one of the development of the commerce.

The evolution of the transport fleets was also a parallel process with the evolution of the war fleets, which have determined the political control of the markets.

The Middle Ages were characterized by a fracture of the markets due to the fall of the Roman Empire, fracture that had as a consequence an unprecedented contraction in the history of the world of the maritime transport markets.

This contraction lasted for nearly a millennium, having a powerful reanimation not until around the 1500s, along with the Renaissance.

Keywords: *maritime transport, evolution, middle ages.*

EVELOPMENT ON QUALITY MANAGEMENT CONCEPTS

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ABSTRACT

The purpose of this paper is to perform an analysis of the history of the Total Quality Management (TQM) in the private sector, taking a closer look at its five stages in the Western hemisphere: quality inspection, statistical quality control, system-oriented quality assurance, company-wide quality control, total quality management.

Keywords: *quality management, quality control, quality inspection, quality assurance.*

EXCELLENCE MODELS IN PUBLIC ADMINISTRATIONS IN THE EUROPEAN UNION

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ABSTRACT

Among excellence models in public administrations in the EU, CAF and EFQM are used most. In use are also models that countries have adapted or designed themselves (for example: the Swedish Quality Model, used since 1992, INK developed by the Netherlands and also used by Belgium, and KVIK in Denmark).

Keywords: *excellence model, CAF, public administration, quality management.*

AVOIDANCE OF COLLISION RISK

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ABSTRACT

Over the past decades there has been a continuous increase in the public concern about general risk issues. The consequence of this trend is that whenever a catastrophic accident occurs - and receives media coverage - there is an immediate political and public demand for actions to prevent the same type of catastrophe in the future. Many of the past improvements in safety of marine structure have been triggered by disasters but there is a change in this trend nowadays.

The maritime society is beginning, although slowly, to think and work in terms of safety assessment of individual ships instead of the much generalized prescriptive regulations which have evolved over the past 150 years.

In line of these aspects it is clear that rational procedures for evaluating the consequences of accidental loads are highly desirable, not to say necessary.

Collision risk or danger usually occurs in high sea, when navigation is led by Officer on Watch, as well as by traffic devices, when the breaking of rules is more significant: the rules have not been observed and/or efficient collision avoidance measures haven't been taken in due time.

Collision risk is an imminent risk, which requires immediate and firm measures for the re-establishment of the safety situation with respect to the collision with the target or other vessel that could bring about human accidents, serious damages to the vessel's hull, pollution, wrecking, scuttling, etc.

Collision risk is directly related to the „preventing method" of collision risk avoidance by assessing the collision probability together with the potential consequences. It is specific to „I" intersection angle of collision free courses.

Keywords: *ship, collision, avoidance, risk.*

RISK MANAGEMENT TODAY IN SHIPPING COMPANIES

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ABSTRACT

The risks at sea continue to be subject of many shipping documents describing the voyages completed by carriers engaged in maritime trading. The current policies aim for the development of some mutual insurances to cover the risks to which the ships are exposed to and, in particular, the crew which must be reimbursed in case of accidents. Currently, one of the biggest impediments standing in the way of the naval industry's progress on an international level is the lack of methods for determining risk levels. The volume of commercial activities and the pressure put on the market requires orientation towards new methods and techniques of risk administration, in other words the elaboration of a risk management plan, which, as professor Kuo also said, has the purpose of "maintaining and controlling risks and dangers between certain tolerance margins, to a practically negligible level". I consider that a coherent managerial plan must include techniques of identifying potential accidents and of analyzing risks, in order to improve the safety measures and to reduce the loss of human lives and also to increase the quality of decisions. The practice of an efficient management requires some quality standards to be set, which must be set progressively after a careful analysis of the organization and of the evolution perspectives. Therefore, synthetically, a system of safety management is based on going through the following steps: elaborating clear policies and safety objectives; planning concerning the development of action plans , with the determination of roles and the assignment of responsibilities; implementing the action plans and the methods; periodical evaluation, by comparing the results obtained with the objectives set; and last but not least, improving performance, by identifying malfunctions, periodical updating of the risk evaluation and by taking corrective measures.

Keywords: *Risk, management, safety, shipping, maritime industry*

THE ROLE OF INTERMEDIATES IN THE EU-27 BUSINESS COLLAPSE: CAUSE, EFFECT OR BOTH

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ABSTRACT

Some important changes in intermediary goods trade have emerged over the last decade regarding the geographical structure of trade. Results of the intermediate goods trade analysis revealed that the composition effect is not the major explanation for the pronounced decrease of exports and imports of parts and components of the EU-27 countries. Thus, while the composition effect and possible the inventory adjustments may have contributed to the proportionately decline of exports and imports of parts and components, it seems insufficient to be responsible for the observed changes. However, severe decline of trade with intermediate goods is one of the reasons that explain why the trade decrease was even more pronounced than was suggested by the income elasticity of long-term trade. Observing the recovery of trade flows, we can expect a rapid expansion of the EU-27 trade if the sharp fall of parts and components was due inventory cycle, as empty stocks must be restored. There is however a risk that disruption / disintegration of supply chains caused by the financial crisis has a negative effect on trade during the recovery period

Keywords: *Intermediates, parts and components trade, financial crisis.*

MOTORWAYS OF THE SEA

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ABSTRACT

In its communication aim, the European Commission presents the following definition: short distance shipping means the movement of cargo and passengers by sea between ports situated in Europe geographical area or between those ports and ports situated in non-European countries located at closed seas on the border of Europe.

Keywords: *shipping, cargo.*

ECONOMIC AND SOCIAL COHESION FACTOR (FCES)

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ABSTRACT

Cohesion, as defined by Article 158 of the European Communities Treaty, is necessary to promote "the general harmonious development" of the Community and requires a reduction of "disparities between development levels of different regions and lack of progress in disadvantaged regions," including rural areas.

Keywords: *economic, development, reform, territorial cohesion.*

CONSIDERATIONS ON THE DEVELOPMENT OF INTERMODAL TRANSPORT NETWORK

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ABSTRACT

Individual existence of "homo sapiens" is accompanied from "sunrise" to "sunset" in most cases, by the questions "Why?" "What is it?" "What means?" "How?" and often, "How much?".

Precisely because of this, there can be asked simple questions to which, sometimes, there are a multitude of answers and conclusions.

In the theme of these lines we are trying to identify answers to several questions.

Keywords: *transport, management, shipping, cargo, traffic*

TOOLS USED TO BENCHMARK THE EFFICIENCY OF CONTAINER PORTS AND TERMINALS

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ABSTRACT

Container terminal is an important element in the contemporary global economy; on the international market it is very important to know who operates efficiency. In this paper the efficiency of container port or terminal is benchmarked by Data Envelopment Analysis, which is a non–parametric linear programming method; the method identifies efficient or inefficient DMUs and diagnoses the factors that differentiate the performance of inefficient DMUs. This paper presents a model of DEA and examines some recent studies about the container port production efficiency.

Keywords: *Efficiency, Data Envelopment Analysis (DEA . Production, Container Terminal.*

REALITIES AND PERSPECTIVES IN THE DEVELOPMENT OF TRANSPORT ACTIVITIES

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ABSTRACT

Transport is not only the link between economic branches and the movement of trade in goods between the different States of the world, but also an important factor in the GDP and population. Thus, without a system organized at the global level can achieve international economic exchanges and may not be integrated in all areas of the world circuit and geographical regions of the world and cannot take advantage of globalization.

Keywords*: transport system; globalization; competitivity; port management, port reform.*

DIMENSIONS IN THE DEVELOPMENT OF SHIPPING ACTIVITIES

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ABSTRACT

Achievement of European standards in the maritime navigation involves extensive paperwork on rearranging the system components in a logical, bringing transport infrastructure to a level performance, environmental protection, the safety of passengers, stimulate private initiative, the restructuring of transport capacities and remodeling cultural organizations operating in this area.

Keywords: port *management; port marketing; maritime transport; development.*

ROMANIA EUROPE'S CROSS-ROADS PAN-EUROPEAN CORRIDORS AND TEN-T PRIORITY AXES. CURRENT CONDITIONS AND PERSPECTIVES

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ABSTRACT

Transport networks in the Balkans have developed for centuries according to actual trade and travel requirements but also to political constrains. Both factors have significantly changed recently, but the links to provide basic accessibility to the region already exist, even if many of them are sub-standard and provide a poor level of service, largely as a result of accumulated under-investment and a lack of adequate maintenance. Intermodal transport is still rare in the Balkans and inter-modal facilities or equipment do not, for the moment, constitute an impediment to the development of long distance traffic through the region. Following the political and economic opening after 1989, Romania, an E.U. frontier state becomes an important international traffic component which raises issues that will need to be solved not only from a technical point of view but also in compliance with the European environmental policies.

Key words: *Pan-European Corridors, TEN-T priority axes, sustainable development of romanian transport sector*

THE IMPORTANCE OF DANUBE RIVER AS STRATEGIC NAVIGATION CORRIDOR

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ABSTRACT

Since the dawn of known history the Danube has connected the nations and civilizations living along its banks with each other and with the rest of the world. The Danube has been for a long time, an important transport route that connects the Black Sea to a large number of harbours in south-eastern and central European countries, with further connections to Western Europe (Germany and Rhine-Main-Danube Canal), Eastern Europe and Turkey. The Danube basin is the most multinational river basin in the world, and the fact that the river flows directly over territories of ten riparian countries (Austria, Bulgaria, Croatia, Germany, Hungary, Moldova, Romania, Serbia, Slovakia and Ukraine) and that the basin itself consists of additional 9 states (Albania, Slovenia, Bosnia and Herzegovina, the Czech Republic, Italy, FYR Macedonia, Poland, Montenegro and Switzerland) makes it very important for their economies and enables extraordinary opportunities for transport, trading, tourism and many other means of communication among the people that live there.

Key words: *Danube River, strategic transport corridor, legislation and international conventions*

A SPINNING TAIL MISSILE CFD AERODYNAMIC STUDY

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ABSTRACT

Applied aerodynamics has, historically, involved a very strong mix of theory and experiment. This is partly because experiments can be very costly and computations are rarely sufficiently sophisticated. This will continue to be the case. Computational Fluid Dynamics (CFD) is playing an ever increasing role in aerodynamic design for advanced missiles either for performance improvement of the existing system for new missions or for new concept development for future missions. A cost effective design process is to judiciously combine the wind tunnel tests and CFD studies that exploit the inherent strengths of each of these. The objective of the current paper is to present a reliable CFD advanced technique for obtaining supersonic spinning tail missile aerodynamics. In achieving this goal state of the art software was involved: Fluent 6.1, along with all its facilities. As simulation scenarios, were considered four missile spinning tail angular velocities corresponding to 500, 1000, 1500 and 2000 rpm and a comparative study of computed results was conducted. The outcome of this paper should be a comprehensive and exhaustive study in CFD sense, of this special class of missiles.

Keywords: *Missile; CFD; Spinning Tail; Aerodynamic*

EXPLOATATION OF OIL AND GAS DEPOSITS IN THE BLACK SEA. ENVIRONMENTAL IMPACT OF SESIMIC ACTIVITY

CHIS TIMUR

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ABSTRACT

The prospecting and exploitation activity of hydrocarbon deposits in Romania has experienced a major development in the nineteenth century and has remained since a major component in achieving energy independence in our country. In 1970 the oil and gas production in Romania reached a peak of over 14.5 million tons of crude oil. Gas production reached 33 million tons of oil equivalents. After 1990 the production level fell again, because of the depletion of the existing resources and the lack of investment prevented the discovery and the development of new fields. They have led in the last few years to a decrease of the oil production level to less than 5.0 million tons of oil and of the gas production of 10,3 million oil equivalent. After 1990 the Romanian Government through THE NATIONAL AGENCY FOR MINERAL RESOURCES has decided to organize international auctions to award a series of contracts regarding exploration and participation to rates of production of specialized companies that run all the financial funds and necessary technologies for the development of hydrocarbon prospecting activities. That is why in the Black Sea, beside the oil and gas deposits leased to OMV Petrom, there were also leased 7 areas needed for research, exploration and possible exploitation of oil and gas deposits. This paper presents the effects of seismic research works on the environment, considering that these are the first that will run on the platform of the Black Sea shore

Keywords: *research, seismic, Black Sea, impact assessment.*

COMPUTER STUDY OF STRESS STATE ON A SINGLE FLOOR PLATE USING FINITE ELEMENT METHOD

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ABSTRACT

The purpose of this paper is to verify the induced stresses of a framework element from central area of the chemical tanker ship type.

This static calculation was performed by the finite element method with Femap software as modeler and NX Nastran as solver.

Keywords: *mechanical structural, hydrostatic water pressure, stress calculation.*

OPTIMAL SIZING OF THE SECTION IN THE SYSTEM OF EQUIVALENT GIRDER

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ABSTRACT

In the preliminary design phase if the ship has an important cylindrical portion, master section sizing gives a relevant image on the rest of the structure. The objective function can be weight per linear meter of the structure elements with regular repetition in longitudinal direction.

There are situations when the resulting structure is oversized (or possibly undersized), so that a new calculation of structure sizes is necessary to achieve the best.

Keywords: *optimization, sampling, structure of the ship.*

OCEANOGRAPHY

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ABSTRACT

This article considers the properties of the oceans such as water properties, circulation, currents and tides. How these properties affect the operation of underwater vehicles, such as submarines and remotely operated vehicles (ROVs) and equipment, is discussed.

Earth is the only planet known to have water resident in all three states (solid, liquid and gas). It is also the only planet to have known liquid water currently at its surface.

The oceans cover 70.8% of the earth's surface, far overreaching earth's lands mass. Of the ocean coverage, the Atlantic covers 16.2%, the Pacific 32.4 %, the Indian Ocean 14.4 %, and the margin and adjacent areas the balance of 7.8 %.

Water in known as the 'universal solvent'.

The circulation of the world's water is controlled by a combination of gravity, friction and inertia.

Keywords: *Ocean, circulation, currents, tides, water, properties, ship.*

THE COLD WELDING ON COGGED SURFACES

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ABSTRACT

Welding by cold pressing on cogged surfaces, produces the joint of a component made from an easy deformable metal by pressing on the cogged surface of a harder metal component. Different welds between aluminium (the easy deformable component) and copper, brass, steel, stainless steel (harder component, cogged on the contact surface) can be obtained. The experimental results show that the weld can be achieved at lower deformation rates than in the classical cold welding case. The weld is obtained only by deforming the aluminium component at a deformation rate of 20 … 20%. The welding on cogged surfaces of materials with different plasticity makes possible the production of bimetallic or multilayer elements. The weld tensile strength is up to 10% of aluminium ultimate tensile strength, better results being obtained for the shearing strength. A thermal treatment can be used to double the joint resistance, by activating the materials diffusion on the contact surface. The weld contact electric resistance is negligible, recommending the process for producing dissimilar elements used in electrotechnics..

Keywords: *cold welding, pressure welding, aluminium joints.*

ELECTRICAL ENGINEERING APPLICATIONS OF THE WELDING ON COGGED SURFACES

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ABSTRACT

The welding on cogged surfaces between aluminium and copper to be useful so as to replace the mechanical aluminium-metal contact with the copper-metal contact. The possible applications in this respect have been analyzed for the following concrete directions: The welding of electric aluminium conductor bars; The sheathing of electric aluminium conductor bars; The sheathing of the aluminium clips. The contact electric resistance measurements made with a CA 10 Microhmeter indicates negligible values of 1-5 μΩ. These values are constant in time during the exploitation of the electrical contact (tests during months of exploitations were also performed). The temperature in the contact area was measured with a Therma Cam PM 675 PAL thermographic camera. The efficiency of the sheathing is obvious if we were to consider the overheating inside the substation with only 3°C as compared to the 30-40°C normally existing there in the case of classical joints..

Keywords: *contact electric resistance, aluminium-copper joints, cold welding.*

POROUS MATERIAL ANALYSIS REGARDING HUMIDITY EFFECTS OVER THERMICAL CONVEYANCE

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ABSTRACT

The study presents the influence of moisture of the thermical transfer coefficient about the material with high permeability at water/vapours and/or active capillary. There is an evidence in the next determination methods of the thermical transfer coefficient active, passive, and with the help of a device with hot protected plate.

Keywords : *transfer, capillary, thermical, coefficient, enthalpy.*

OPTIMIZATION OF OPERATING REGIMES OF NAVAL PROPULSION PLANTS BASED ON MINIMUM COST OF TRANSPORT

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ABSTRACT

The problem of optimization of the functioning regimes of the energetic plant with internal combustion engines is very complex and must be solved hierarchically, on the base of the component sub-systems optimization, using the corresponding optimization methods, with the necessary calculation algorithms.

The paper presents the calculation of specific cost of transport to an oil tanker.

Keywords: *energetic plant ,oil-tanker, auxiliary engines, fuel consumption, deadweight , diesel*

THE WIND DIRECTION AT CONSTANTA PERIOD 1961-2000 I

MATEI DANIELA

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ABSTRACT

This study is based on the analysis, interpretation and graphical representation of the wind data, a period of 40 years for Constanta weather stations.

Keywords: *climate, rose of the wind, baric contrasts*

THE WIND SPEED AT CONSTANTA. PERIOD 1961-2000 II

MATEI DANIELA

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ABSTRACT

This study is based on the analysis, interpretation and graphical representation of the wind data, a period of 40 years for Constanta weather stations.

Keywords: *climate, rose of the wind, baric contrasts*

THEORETIC BASIS OF ENERGY AND EXERGY ANALYSIS

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ABSTRACT

The first law of thermodynamics deals with the quantities of energies of different forms transferred between the system and its surroundings and with changes in the energy stored inside the system. This principle is not able to show where irreversibility occurs in a system or process. To determine the irreversibility it is suitable the exergy analysis method which provides an indicator that reveals in which direction efforts should focus in order to improve the performance of thermodynamic systems.

This paper offers an overview on concepts like energy, entropy, exergy and plant systems.

Keywords: *law, energy, exergy, analysis, thermodynamic.*

CONTINUUM TRIBOLOGICAL PROCESSES FOR METALURGICAL EQUIPMENT

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ABSTRACT

This paper presents a coupled thermo-elastic contact problem with tribological processes on the contact interface (friction, wear or damage). The unilateral contact between the cilindrical roll system and a deformable foundation (slab, bloom, etc) is modeled by the Kuhn-Tucker (normal compliance) conditions, involving damage and/or wear effect of contact surfaces.

The continuum tribological model is based on gradient theory of the damage variable for studying crack initiation in fretting fatigue [11], [14], [15] , and the wear is described by Archard' s law. The friction law that we consider is a regularization of the Coulomb law.

The weak formulation of the quasistatic boundary value problem is described by using the variational principle of virtual power, the principles of thermodynamics and variational inequalities theory. Thus, the main results of existence for weak solution are established using a discretization method (FEM) and a fixed-point strategy [5].

Keywords: *Continuous casting, Thermoelastic contact, Friction, Wear, Fretting fatigue, Variational Inequalities, Galerkin Discretization Method*

QUALITY OF CASTABILITY IMPROVEMENT FOR TREATED STEEL GRADES

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ABSTRACT

Uncontrolled changes in inclusion composition may result in shifts from erosion to clogging, or vice versa, of the steel flow control refractory.

The conditions that result in Mg contamination of Al killed Ca treated steel grades is discussed and how it influences the nature, number, composition of inclusions and its influence in clogging. Several cases will be used to illustrate how the chemical equilibrium between Al-Ca-Mg-O-S influences steel castability.

Keywords: *steel impurities, Al killed Ca, clogging, refractory erosion, castability.*

CAD/CAM/CAE TECHNOLOGY IN INJECTION MOLD DESIGN

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ABSTRACT

The paper presents the concept of using the CAD/CAM/CAE technology to design the injection mold. Now, there are many dedicated software which leads users through a logical step by step approach to create polymeric injection molds. The softwares offer dramatic time saving potential by removing much of the repetition prevalent in mold tooling design and freeing up our time for more important tasks. Mold Design furnishes standard component libraries, an extensive choice of industry standard mold bases, automated generation of all required components and associative electrode design, reduces time to market, improves quality and lower cost.

Keywords: *CAD/CAM/CAE technology, polymeric material, mold injection.*

STRAIN GAGE ROSETTE MEASUREMENTS IN MOLDED PLASTIC PARTS

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ABSTRACT

The paper presents the strain gage rosette measurements on polypropylene molded parts. The strain measurement on a plastic or composite test object will frequently call for much greater skill, expertise, and knowledge of mechanics than that typically required with the structural metals. The characterization of plastics for engineering purposes necessitates considerably testing than is typical for metals primarily because of time, temperature, moisture, and aging effects on the material behavior. With the increasing number of plastic structural components, it can be expected that the need to measure service strains on these materials will increase correspondingly and the strain gage application technology must be advanced accordingly. It is very important for plastic materials to determine the Young's modulus and the Poisson's ratio using the strain gage rosette.

Keywords: *plastic material, strain gage rosette, elastic constants, mold injection.*

THE EFFECTS OF COOLING WATER SYSTEM OF NUCLEAR POWER PLANT CERNAVODA ON DANUBE ZOOPLANKTON STRUCTURE

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ABSTRACT

During three times in April, June and August of 2010, water samples were collected from 6 Danube River key stations around Cernavoda Nuclear Power Plant and the structure of zooplankton community was studied. Totally, 54 taxa (excluding 4 age groups) of Rotifera, Cladocera, Copepoda and Bivalvia were recorded with densities that vary from 62640 indiv./m^3 to 684274 indiv./m^3, depending on sampling site and temperature.

Keywords: *nuclear power plant, Danube River, zooplankton populations, thermal effects.*

COMPARATIVE STUDY TO IMPROVE THE MECHANICAL CHARACTERISTICS ON IMPACT ON PLATES MADE OF FIBBERS REINFORCED GLASS

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ABSTRACT

Fibberglass reinforced polyester (GRP) is the most used composite material in ship building industry and required a careful study when we talk about the mechanical characteristics and theie resistance to fatigue. A common field of their application between others is the ship building industry. The use of composite materials in this branch is justified by the ship owners' desire to replace steel or other metallic materials used so far. Therefore, the most used composite material in ship building industry is the fibberglass reinforced polyester known as GRP. This paper proposes to study the static and the dynamic behaviour of GRP plates and the importance of the framework arrangement for three type of panels.

Keywords: *Composite Materials, Fatigue, Mechanical Characteristics, Fatigue - Variable Load.*

A BRIEF SYNTHESIS OF NONCIRCULAR GEARS

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ABSTRACT

In applications that require variable rotational motion, noncircular gears have become a competitive alternative to cams, linkages and even electrical motors. A curiosity in old gear industry, the noncircular gears are quite popular nowadays due to developments in computational modeling and technologies. The paper is focused on a brief presentation of the noncircular gears, i.e. their output transmission functions and recent approaches for gear design and possibilities of manufacture are summarized along with the authors original contribution to the noncircular gear modeling process.

Keywords: *noncircular gears, pitch curve synthesis, teeth generation*

HARMONIC CURRENTS AND THEIR EFFECTS

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ABSTRACT

Harmonic currents are generated by nonlinear loads. We refer to harmonics in power plants mainly because harmonic currents arising due to currents and most of the harm is due to these currents. You can not draw useful conclusions without knowing the current harmonic spectrum, but is usually the only factor to determine total harmonic distortion (Total harmonic distortion - THD). When harmonics propagate through the distribution system, the network edges not crossed by harmonic currents, they are royal as tensions.

Keywords: *harmonic currents, the fundamental sinusoidal, power factor correction.*

THE INFLUENCE OF DUCTS VENTILATION ON THE DISTRIBUTION OF AIR GAP MAGNETIC FLUX DENSITY AT ELECTRIC MACHINES

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ABSTRACT

For high performance operation (high efficiency, low loss, stability, instauration, etc.), usually in electric machines is necessary to obtain first of all an optimal distribution of magnetic flux density in various parts of machine. Actual construction of the machine requires inevitably some important constructive interventions which will first effect of distorting the magnetic field: slots, yoke, ventilation ducts, etc. This work paper presents the influence of ventilation ducts on the air gap magnetic flux density computed with Schwartz-Christoffel mapping. The knowledge of this aspect is an important one because it intervenes decisive in the design stage when are establish the sheets packages length with immediate consequences on the determination of the main geometric dimensions, and heat transfer that determines the lifetime of the machine.

Keywords: *ventilation ducts, Schwartz –Christoffel mapping, air gap magnetic flux density*

BRIDGE OSCILLATOR WITH CURRENT CONVEYORS AND CURRENT SOURCE ORDERED IN VOLTAGE

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ABSTRACT

The paper proposes two circuits of oscillators made with current conveyors, a simple method of determining the oscillation frequency and of the relation that must exist between the passive elements of the network for the generation and maintaining of sinusoidal oscillation.

Keywords: *Oscillator, current-conveyor, current-voltage converter.*

FACTOR IDENTIFICATION OF ROMANIAN PHYSICIAN MIGRATION. COMPARATIVE ANALYSIS

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Bioethics Faculty of Medicine and Pharmacy University, Iasi, Romania

ABSTRACT

The way in which working, or having a job in today's society is seen tells a lot about it, and about the people it

includes. Generally speaking, Romanians, but also people from other countries see work as a defining component**Error! Reference source not found.**. Exactly from that need to work and live a decent life it has been observed that the physician migration phenomenon in Romania has escalated, with remarkable performance from the number of people involved, from their results and methods of migration. The present study, which are based to the comparative analysis, it propose to identify the reasons of the physician emigration and to find the modality to stop that.

Keywords: - *migration, globalization, physicians, analysis, identification, factors*

ADAPTIVE CONTROL ALGORITHMS FOR SMART ANTENNA SYSTEMS

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ABSTRACT

Smart antenna systems are used in a wide range of fixed and mobile communication applications. Generally smart antennas are made of antenna arrays and signal processors. The antenna array can have any kind of shape, from linear to circular or rectangular. For simplicity considerations in this paper we studied the linear antenna array. The main characteristic of a smart antenna system is the digital signal processing feature. The system processes the signals in order to obtain a desired radiation pattern. In this paper we will describe some of the most significant algorithms used for processing the signal received by every element of the array along with some of the advantages and disadvantages for each of them. The algorithms described are the LMS (Least Mean Squares), the RLS (Recursive Least Squares) and CMA (Constant Modulus Algorithm).

Keywords: *Smart antenna systems, beam forming, adaptive algorithms, Least Mean Squares, Constant Modulus*

NETWORK COMMUNICATION SOLUTION IN INDUSTRIAL ENVIRONMENTS

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ABSTRACT

This paper describes communication solution for fast data acquisition systems in a large distributed network, with data recovery, who using a central communication server. In welding plants, the automation systems send data with a large frame rate. The data acquisition controllers send data at small time intervals, and the size of data blocks can be very large. In large welding plants, with a big numbers of controllers (starting from about 100 controllers) this can be a problem. In their network (in conformity with IEEE-802.3) can appear a data packet storm or/and the destination server can be locked. In this case we can have loosing of data packets. The solution proposed describes a data revival mechanism, for prevent loosing of packets. This solution is implemented at application level of TCP/IP stack, on both sides (server and controller). The solution is implemented in Marathon Weld's APAS (Arc Process Analysis System) data acquisition system.

Keywords: *data communication software, network protocols.*

SATELLITE DATA COMMUNICATION CHANNEL SIMULATOR

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ABSTRACT

This paper describes Inmarsat Satellite data communication infrastructure for a simulator. This communication channel implements GMDSS (Global Maritime Distress and Safety System) and data transfer functions between INMARSAT-C compatible terminal and a Land Earth Station (LES). Thrane & Thrane compatible software, installed on embedded controller is used for simulation of Inmarsat terminal. This controller transfer data to simulated Inmarsat satellite using a wireless network. The satellite functions are implemented into another embedded controller. This satellite communication controller is linked with Inmarsat terminal via wireless network and with another land earth station using a secondary wireless channel. The land earth station is software implemented in a PC linked with simulated satellite using a wireless network. This center is able to manage messages received from Inmarsat terminal,

via simulated satellite, and convert them into short text messages, automatically delivered to local network workstations, in faxes format or mail messages. The system can be consists as base for a GMDSS simulator

Keywords: *satellite communications, maritime data communications.*

DESCARTES' RULE OF SIGNS

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ABSTRACT

In this paper we show a method of finding the number of positive and negative roots of a polynomial and alternative methods of finding the roots of a polynomial using the programs "Matlab", "Maple" and "Mathematica".

Keywords: *Descartes, positive roots, negative roots.*

CONCERNING THE BEHAVIOR OF THE HARMONICALLY FORCED DOUBLE PENDULUM

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ABSTRACT

The goal of the paper it was to study a simple double pendulum driven by an harmonically external force acting on the outer bob. We have interested on the influence of the direction and magnitude of the external force on the double pendulum's motion. First the physical system was introduced and the equations of motion are derived. Then we have solved numerically these equations for three cases: unforced pendulum, horizontal and vertical harmonically forced pendulum, respectively. For every case we have computed some tools for regularity and chaos (time series curves, phase plane, Poincare section of surface, largest Lyapunov exponent, fast Lyapunov indicator and smaller alignment index). Because of the excellent agreement between all these indicators, we could derive firm conclusions about the behavior of harmonically forced double pendulum.

Keywords: *Forced double pendulum, indicators of quasiperiodic and chaotic modes of behavior.*

SOME MODELS TO MEASUREMENT THE EFFIENCY AND A REVIEW OF LITERATURE ON DATA ENVELOPMENT ANALYSIS

LITA IULIAN

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ABSTRACT

This paper present a model of data envelopmet analysis, the topics of other alternative models and a set of papers who presents bibliography and taxonomy of DEA.

Keywords: *data envelopment analysis , efficiency, productivity, models, bibliography, taxonomy.*

A SURVEY ON FRONTIER ANALYSIS

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ABSTRACT

Measurement of efficiency or inefficiency in economic theory is one of the main topics in literature; this paper shows a parametric technique to estimate the production frontier and is a useful guide to literature in stochastic frontier analysis

Keywords: *Efficiency, Stochastic frontier,Production function,Parametric frontier.*

SYMPTOTIC SPECTRAL MEASURES

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ABSTRACT

We review the subject matter of asymptotic spectral measures from the perspective of asymptotic equivalence relation and discuss the properties of elements of an asymptotic equivalence class. Furthermore, we study a particular case of asymptotic spectral measure ($\{A_h^a\}_{h\in(0,1]}$, given by $A_h^a(b) = A_h(a \cap b)$, when $\{A_h\}_{h\in(0,1]}$ is an asymptotic spectral measure).

Keywords: *asymptotic spectral measure, positive operator –valued measure, support, spectrum, asymptotic equivalence.*

POSITIVE ASYMPTOTIC MORFISMS

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ABSTRACT

We show the relationship between support of a positive asymptotic morphism and its spectrum, using the concept of a positive asymptotic morphism as it was introduced by Martinez and Trout [1], and prove that a positive asymptotic morphism has o a regularity property.

Keywords: *asymptotic morphism, positive morphism, support, spectrum, regularity property.*

STUDENT'S MOBILITIES, AN INSPIRATIONAL MARKETING TOOL. CASE STUDY:ROMANIA

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ABSTRACT

Used wisely, Erasmus programme can significantly accelerate the modernization and reform in higher education. As the Ministers responsible for higher education in the countries participating in the Bologna Process, met in Budapest and Vienna on March 2010, appreciated in their common declaration, higher education institutions, students and staff are "engaged in a series of reforms to build a European Higher Education Area based on trust, cooperation and respect for the diversity of cultures, languages, and higher education systems ". The Erasmus programme is maybe the most helpful tool in building this bridge. Our analysis aims to underline the relevant aspects concerning the selection process for an Erasmus mobility: study mobilities (SMS) and placement mobilities (SMP) in Romania; to identify the main difficulties experienced by final beneficiaries undertaking Erasmus mobilities and to assess the impact of participation in the Erasmus programme upon students, teachers and institutions. We want to see if there are best practices and lessons learned at national level and our main instrument will be a survey conducted in seven universities, at national level.

Keywords: *Erasmus, mobilities, best practices, recognition, ECTS*