

WEDNESDAY, 8 JULY, 2009
13:15 - 13:30: WELCOME
13:30 - 14:30: PLENARY LECTURE
"Optimization Problems and Mathematical Optimization Methods"
by Prof. A. Kanarachos, Frederick University, Cyprus
PARALLEL SESSIONS
WEDNESDAY 14:30 -15:50

Wednesday, July 8th 14:30-15:50 **Room : NAOUSSA**

AIR, SEA & HUMAN TRANSPORT MODELLING

Chairmen: Panayotov A., Georgas N.

- 14:30-14:50** "Optimizing and Streamlining the Process of Airport Analysis".
Panayotov A.
- 14:50-15:10** "On the Congestion of Bosporous Straits".
Kontinakis N.
- 15:10-15:30** "Marine Forecasting for the New York Urban Waters and Harbor Approaches: The Design and Automation of NYHOPS".
Georgas N., Blumberg A., Bruno M., Runnels D.
- 15:30-15:50** "Advanced Techniques for Understanding and Modelling Travel Behaviour in Greece"
Politis I., Basbas S.

Wednesday, July 8th 14:30-15:50 **Room : EDESSA**

SIMULATION OF BIOLOGICAL FLOWS & DIAGNOSIS

Chairmen: Tabirca S., Sotiropoulos F.

- 14:30-14:50** "Three Dimensional Transient Blood Flow Through a Stenosis: Transient Simulations"
Hussain I., Langdom C.R.
- 14:50-15:10** "Numerical Simulation of Fluid-Structure Interaction in 3-D Engineering and Biological Flows"
Borazjani I., Behara S., Sotiropoulos F.
- 15:10-15:30** "Tumor Growth Prediction Using the Gopertz Model"
Paltanea M., Tabirca S., Chen Y.-J., Tangney M.
- 15:30-15:50** "3D Cell Visualisation"
Gao X.-F., Tabirca S., Tangney M.

Wednesday, July 8th 14:30-15:50 **Room : KOZANI**

ENGINEERING APPLICATIONS SESSIONS

Chairmen: Wang J., El-Katatny I.

- 14:30-14:50** "Integrated Analysis System of Afterburning in 2Xst 18 Cogeneration Power Plant"
Barbu E., Zavodnic F., Ionescu S., Vilag V.
- 14:50-15:10** "Optimization of Desulfurization Process for Fluidized Bed Combustors"
Wang J., Anthony E.
- 15:10-15:30** "PIGASOS – A New Computer Package for Simulation and Optimization of Gas Sweetening Plants that Use Aqueous Amine Solutions"
Lattas S.
- 15:30-15:50** "Evaluation of the Effect of Furnace Configuration in Top Submergence Gas Injection Systems Using an Air-Water Model"
El-Katatny I., Yang W., Morsi Y.

PARALLEL SESSIONS**WEDNESDAY 16:20 -17:40**

Wednesday, July 8th 16:20-17:40 **Room : NAOUSSA**

MODELLING OF BUILDING BEHAVIOUR

Chairmen: Al-Waked R., Chen T.

- 16:20-16:40** “Hybrid Cooling of a Hospital Ward-CFD Analysis”
Al-Waked R.
- 16:40-17:00** “Experimental Verification of Control of Asymmetric Building Vibrations by Tuned Liquid Column Gas Dampers”
Khalid B., Ziegler F.
- 17:00-17:20** “Numerical Investigation of the Natural Ventilation of a Building”
Nikolopoulos N., Nikolopoulos A., Nikas K.-S.
- 17:20-17:40** “Validation of Daylight Simulation Tools, Radiance, Adeline and DOE2”
Cheng T., Chen T.

Wednesday, July 8th 16:20-17:40 **Room : EDESSA**

HUMAN STRUCTURE FEM MODELLING.

Chairmen: O’Driscoll C., Stanley W.

- 16:20-16:40** “A Finite Element Analysis of a Total HIP Arthroplasty Using Modular HIP Implants with Respect to Material Properties”
Theodorou E., Megas P., Provatidis C.
- 16:40-17:00** “Re-Analysis of the Shearing Stresses in the Cement Mantle in a Model of an Implanted Exeter™ Prostheses (a) on the Transverse Component of the HIP Reaction and (b) With and Without a Collar”
O’Driscoll C., Stanley W., Colgan D., McTague D., Little E.
- 17:00-17:20** “A Preliminary Three Dimensional Investigation of the Radiocarpal Joint Using the Finite Element Method”
Xyphitos F., Papachristou G., Grigoris P., Chronopoulos E., Kaselouris E., Venetsanos D.T., Provatidis D., Kollialou E., Efsthopoulos N.
- 17:20-17:40** “Finite Element Modelling of Yarn Balloon in the Ring Spinning”
Mardani Mehrabad N., Safar Johari M., Aghdam M., Mardani Mehrabad A.

Wednesday, July 8th 16:20-17:40 **Room : KOZANI**

MODELLING OF CASTING PROCESSES.

Chairmen: Abuluwefa H.T., Kim S.-Y.

- 16:20-16:40** “Manufacture of Large Prototype Using Hollow Solid Model”
Song H.-B., Park B.-H., Park D.-K., Kim T.-H., Jeon E.-C.
- 16:40-17:00** “A Study on the Master Model Application of Vacuum Casting Using Hollow Solid Model”
Kim T.-H., Kim S.-Y., Han M.-S., Park Y.-C., Jeon E.-C.
- 17:00-17:20** “Design and Verification for Mold Support of Low Pressure Vacuum Injection”
Kim S.-Y., Ahn K.-W., Park H.-S., Kim H.-S., Ahn C.-W., Jeon E.-C.
- 17:20-17:40** “Surface Decarburization of High Carbon Steel in Multi Component Gases”
Abuluwefa H.-T.

THURSDAY 9 JULY, 2009

PARALLEL SESSIONS**THURSDAY 09:30 -10:50**

Thursday 9 July 09:30-10:50 **Room : NAOUSSA**
STRUCTURAL MODELLING OF VEHICLES AND FUEL TANKS
Organized by : Kanarachos S.

Chairmen: Kanarachos S., Yildirim A.M.

- 09:30-09:50** "The Influence of Residual Stresses on the Behaviour of Vehicle Structures During Manufacturing"
Papadakis L.
- 09:50-10:10** "An Investigation Regarding Fatigue Life on Composite Fuel Tanks Subjected to Road Loads"
Kanarachos S., Demosthenous G., Pantelalis N.
- 10:10-10:30** "Weight Minimization of Composite Fuel Tanks Produced with the Light RTM Method and Subjected to ADR loads"
Kanarachos S., Demosthenous G., Pantelalis N.
- 10:30-10:50** "A Hybrid Electric Heavy Duty Truck for Cargo Hybrid"
Caliscan K., Y.Sanim Unlusoy, Koukseven I., Arikan K., Kilic V., Kockan I., Yildirim M.A.

Thursday 9 July 8th 09:30-10:50 **Room : EDESSA**
MINI-SYMPOSIUM
"MEDICAL IMAGING" – SESSION I
Organized by Panayiotakis G. and Kandarakis I.

Chairmen: Valais I., Fountos G

- 09:30-09:50** "Effective Doses in Standard and New Examinations in Radiology and Nuclear Medicine" *Invited speech*
Fountos G., Samartzis A.
- 09:50-10:10** "Quantitative Assessment of PET/CT Spatial Resolution and Alignment Error Determination"
Syggelopoulos L., Karatopis A., Samartzis A., Fountos G., Kandarakis I., Panayiotakis G.
- 10:10-10:30** "Luminescence Efficiency of Gd₂O₂S: Eu Powder Phosphors as X-Ray to Light Converter for use in Digital Mammography Detectors"
Michail C., Toutountzis A., Valais I., Seferis M., Georgousis M., Fountos G., Kandarakis I., Panayiotakis G.
- 10:30-10:50** "Assessment of Image Quality in SPECT Systems via the Implementation of a Novel Flood Source Technique"
Fountos G., Zanglis A., Michail C., Kalatzis I., Cavouras D., Samartzis A., Kounadi E., Valsamaki P., Gerali S., Nikiforidis G, Kandarakis I.

Thursday 9 July 8th 09:30-10:50 **Room : KOZANI**
FLUID MECHANICS – ENGINEERING APPLICATIONS

Chairmen: Mathioulakis D., Tsahalis J.

- 09:30-09:50** "A Vowel Production Study, Using Cylindrical Tubes: A Static and Dynamic Case"
Mouzakitis A., Toulaitos C., Mathioulakis D.
- 09:50-10:10** "Dynamic Modelling of a Wet Sub Vehicle"
Cammarata A., La Rosa G., Leonardi R.
- 10:10-10:30** "Towards a Helmholtz's Type Wave Resonance of Greek Harbours"
Stergiopoulos V., Stergiopoulou A., Stergiopoulos G.
- 10:30-10:50** "Air Flow Characteristics in an Industrial Wood Pallet Drying Kiln"
Tzempelikos D., Filios A., Margaris D.

PARALLEL SESSIONS**THURSDAY 11:20 -12:40**Thursday 9 July 8th 11:20-12:40 **Room : NAOUSSA****NONLINEAR PROBLEMS***Chairmen: Filipovic M., Bratsos A.*

- 11:20-11:40** “Comparison of Advanced Collocation Methods for the Solution of Ordinary Differential Equations”
Provatidis C., Isidorou S.
- 11:40-12:00** “Contribution to New Interpretation of the Euler-Bernoulli Equation”
Filipovic M.
- 12:00-12:20** “A Numerical Scheme for the Modified Burger’s Equation”
Bratsos A., Petrakis L.
- 12:20-12:40** “Higher Order Galerkin/Ritz Approximations in 1-D Eigenvalue Problems”
Provatidis C.

Thursday 9 July 8th 11:20-12:40 **Room : EDESSA****MINI-SYMPOSIUM****“MEDICAL IMAGING” – SESSION II****Organized by Panayiotakis G. and Kandarakis I.***Chairmen: Loudos G., Liaparinos P.*

- 11:20-11:40** “Advanced MRI Compatible PET Detectors” – **Invited speech**
Loudos G.
- 11:40-12:00** “Novel High Resolution T2 and T2* Mapping Methods for Iron Deposition Determination”
Karatopis A., Anastasopoulos S., Drakopoulos S., Kandarakis I., Douskou M., Panayiotakis G.
- 12:00-12:20** “MRI Spatial Resolution Limits: Assessment of Various Sequences and Parallel Imaging Methods”
Karatopis A., Anastasopoulos S., Drakopoulos S., Kandarakis I., Douskou M., Panayiotakis G.
- 12:20-12:40** “Luminescence Efficiency of Fast Yttrium Aluminum Garnet Phosphor Screens for Use in Digital Breast Tomosynthesis Detectors”
David S., Michail C., Valais I., Seferis I., Varaboutis G., Gatsos S., Toutountzis A., Fountos G., Kandarakis I., Panayiotakis G.

Thursday 9 July 8th 11:20-12:40 **Room : KOZANI****NUMERICAL & EXPERIMENTAL FLUID MECHANICS****Organized by Mathioulakis D.***Chairmen: Porumbel I., Labropulu F.*

- 11:20-11:40** “Numerical Simulation and Experimental Measurements in a Gas Turbine Exhaust Jet”
Porumbel I., Florean F., Ionescu S., Hritcu C., Sandu C.
- 11:40-12:00** “Non-Newtonian Obligue Stagnation-Point Flow Towards a Stretching Surface”
Labropulu F., Pop J., Hussain I.
- 12:00-12:20** “Aerodynamic Loading of a Box-Type Biplane Configuration”
Asproulis J., Lekas Th., Mathioulakis D.S.
- 12:20-12:40** “Flow Velocity Measurements Inside a Self-Oscillating Collapsible Tube”
Kounadis D., Mathioulakis D.S.

PARALLEL SESSIONS**THURSDAY 14:30 -15:50**Thursday 9 July 8th 14:30-15:50 **Room : NAOUSSA****MECHANICS OF COMPOSITE STRUCTURES***Chairmen: Shevtsov S., Anifantis N.*

- 14:30-14:50** "Post-Impact Permanent Deformation of Circular Glare Fiber-Metal Laminates"
Tsamasphyros G., Bikakis G.
- 14:50-15:10** "Weight Minimization of Circular Glare Fiber Metal Laminated Plates Subjected to Lateral Indentation"
Tsamasphyros G., Bikakis G.
- 15:10-15:30** "Young's Modulus Prediction of CNT-Reinforced Composites Incorporating Interfacial Adhesion Conditions"
Georgantzinou S., Giannopoulou G., Anifantis N.
- 15:30-15:50** "Transient Analysis of a Piezoelectric Shunt Damping for Composite Beam Vibration Suppression"
Shevtsov S., Bragin S., Snegina N., Samochenko I., Axenov V.

Thursday 9 July 8th 14:30-15:50 **Room : EDESSA****MINI-SYMPOSIUM****"MEDICAL IMAGING" – SESSION III****Organized by Panayiotakis G. and Kandarakis I.***Chairmen: Tsantis S., Kalyvas N.*

- 14:30-14:50** "Monte Carlo Simulations in Medical Imaging" - **Invited speech**
Liaparinos P.
- 14:50-15:10** "Detectors for Imaging in Radiation Therapy" – **Invited speech**
Valais I., Xydias P.
- 15:10-15:30** "Implementation of a Software Phantom for the Assessment of Contrast Detail in Digital Radiography"
Liaskos M., Michail C., Kalyvas N., Toutontzis A., Fountos G., Cavouras D., Kandarakis I.
- 15:30-15:50** "Accelerating the Design of Probabilistic Neural Networks for Computer Aided Diagnosis on Mammography, Employing Graphics Processing Units"
Sidiropoulos K., Cavouras D., Pagonis N., Dimitropoulos N., Stonham J.

Thursday 9 July 8th 14:30-15:30 **Room : KOZANI****MECHANICS OF FLEXIBLE COMPONENTS***Chairmen: Lopez De Lacalle L., Kosse V.*

- 14:30-14:50** "Modelling of the Turning of Flexible Components"
Lopez de Lacalle L., Urbicain G., Campa F., Lamikiz A.
- 14:50-15:10** "Mathematical and Experimental Modelling of New Torque Arms with Elastic Elements for Shaft-Mounted Drives"
Kosse V., Yarlagadda P.
- 15:10-15:30** "Adaptive Mesh Generation Based on Coon's Interpolation for Solid FEM Modelling"
Dimitriou V.

PARALLEL SESSIONS**THURSDAY 16:20 -17:40**

Thursday 9 July 8th 16:20-17:40 **Room : NAOUSSA**
FLOW SIMULATION FOR INDUSTRIAL ENGINEERING OPTIMIZATION
Organized by : Margaris D.

Chairmen: Margaris D., Tsalhis D.

- 16:20-16:40** “Parametric Study Performance of a Centrifugal Pump based on Simple and Double ARC Blade Design Method”
Kyparisis S., Douvi E., Panagiotopoulos E., Margaris D., Filios A.
- 16:20-17:00** “CFD Evaluation for Turbulent Natural Convection in Rectangular Enclosures”
Skyllakos A., Filios A., Margaris D., Vrachopoulos M.
- 17:00-17:20** “Numerical and Experimental Studies on the Performance of a Two-Phase Centrifugal Separator”
Kefalas P., Margaris D.
- 17:20-17:40** “Prediction the Slug-Churn Transition in Two and Three-Phase Flow Air-Lift Pump”
Mitkas K., Margaris D., Samaras V., Avgerinos N.

Thursday 9 July 8th 16:20-17:20 **Room : EDESSA**
MINI-SYMPOSIUM
“MEDICAL IMAGING” – SESSION IV
Organized by Panayiotakis G. and Kandarakis I.

Chairmen: Kounadi E., Kalatzis I.

- 16:20-16:40** “The Use of Modulation Transfer Function as an Overall Quality Control Parameter in PET/CT”
Samartzis A., Fountos G., Kalatzis I., Michail C., Zanglis A., Cavouras D., Datsiris I., Kounadi E., Vattis D., Kandarakis I, Nikiforidis G.
- 16:20-17:00** “Image Quality in Digital Radiography. First Results of an Analytical Modeling Approach”
Spyropoulou V., Kalyvas N., Gaitanis A., Kandarakis I., Panayiotakis G.
- 17:00-17:20** “Improving the Classification Accuracy of Computer Aided Diagnosis Through Multimodality Breast Imaging”
Pagonis N., Cavouras D., Sidiropoulos K., Sakelaropoulos G., Nikiforidis G.

Thursday 9 July 8th 16:20-17:40 **Room : KOZANI**
ENGINEERING APPLICATIONS – SESSION II

Chairmen: Kosse V., Rigatos G.

- 16:20-16:40** “MPI Extensions – An Overview”
Margaris A., Souravlas S., Roumeliotis M.
- 16:20-17:00** “Mathematical and Computer Modelling of Engine Piston Heat Flow Using Finite Element Analysis”
Meng C.-C., Kosse V., Yarlagadda P.
- 17:00-17:20** “Robust Power System Stabilization Using Kharitonov’s Exremal Gain Margin Theorem”
Rigatos G.
- 17:20-17:40** “Influence of the Electric Field Inhomogeneity, the Voltage Polarity and the Electrode Grounding on the Dielectric Behavior of Small Air Gaps”
Maglaras A., Maglaras L., Giannakopoulou K.

PARALLEL SESSIONS**FRIDAY 11:20 -12:40**Friday 10 July 11:20-12:40 **Room : NAOUSSA****ENGINEERING APPLICATION SESSION II***Chairmen: Georgiev I., Gholipoori A.*

- 11:20-11:40** “Policy Based Extraction and Insertion for Document Streams in Concurrent and Computer-Aided Engineering”
Georgiev I., Georgiev K.I., Beltcheva O.
- 11:40-12:00** “A Computer Model for Simulating Sunflower Growth and Yield”
Gholipoori A., Sedghi M., Sharifi S.R., Heydari A.
- 12:00-12:20** “A Study of Vibrations of a Crankshaft Having a Crack”
Boianiu M., Alecu A.
- 12:20-12:40** “Some issues on Mechanical Antigravity Mechanisms Using Two Contra-Rotating Masses:
Provatidis C.

Friday 10 July 11:20-12:40 **Room : EDESSA****SPACE FLIGHT MECHANICS***Chairmen: Rugescu R. Tsahalis D..*

- 11:20-11:40** “Wave Propagation in a Pulse Detonation Engine with Application in Airborn Propulsion”
Cirligeanu R., Rugescu R.
- 11:40-12:00** “Stability Constraints Reduction during the Ascent Flight of the Orbital Launcher”
Ionescu F., Gurau-Tudoran M. Constantinescu C.E., Rugescu R.
- 12:00-12:20** “Aerodynamic of a Small Orbital Launcher Regarding Flight Stability and Control”
Rugescu R., Bogoi A., Dumitrache C., Lorincz I.
- 12:20-12:40** “Hybrid Rocket Engine Novel Technology for the Orbital Launcher NERVA”
Predoi S., Coman C., Bogoi A., Rugescu R.

Friday 10 July 11:20-12:20 **Room : KOZANI****SURFACE AND UNDERGROUND WATER FLOWS: ENGINEERING APPLICATIONS***Chairmen: Belbas S.A., Stergiopoulos V.*

- 11:20-11:40** “Models with Memory and Hysteresis in Groundwater Modelling and Remediation”
Belbas S.A.
- 11:40-12:00** “Looking for the “Carrying Capacity” of the Greek Urban Rivers”
Stergiopoulos V., Stergiopoulou A., Stergiopoulos G.
- 12:00-12:20** “Modelling the Evolution and Fate of an Oil Slick with A3-D Simulation Model”
Zafirakou-Koulouris A., Koutitas C., Sofianos S., Mantziafou A., Tzali M., Dermisis V., Dermisi S.