



Third Palestinian Conference
on Modern Trends in Mathematics and Physics

$$\nabla_x \cdot \rho \nabla_x \phi = \int_{\partial\Omega} \psi \cdot \hat{n} dS$$



16 -18, July 2012
Palestine Polytechnic University, Hebron , Palestine

Conference Agenda

Day 1, Monday July16, 2012

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|---|--|--|
| 08:00 - 08:30 | Transportation from Hotels to PPU | |
| 08:30 - 09:00 | Reception and Registration | |
| 09:00 - 10:00 Chair: Wisam Shamroukh | Opening Ceremony - Conference Hall, Abu-Rumman | |
| 10:00 - 10:40 Plenary Talk Chair: Mustafa Abu-Safa | Unconventional Science and Engineering of Gas Shale - Does it Matter for Palestine? <i>Franz-Josef Ulm, Massachusetts Institute of Technology, USA</i> | |
| 10:40 - 11:00 | Morning Break | |
| Parallel Sessions | Mathematics Chair: Edriss Titi | Physics Chair: Imad Barghouthi |
| 11:00 - 11:30 | Inverse Problems, Signal Processing and Imaging: Un Menage a Trois <i>Zuhair Nashed, University of Central Florida, USA</i> | Path Integral Approach to Faraday's Law of Induction <i>Sami AL-Jaber, An-Najah National University, Palestine</i> |
| 11:30 - 12:00 | Stochastic Collocation Methods for Uncertainty Quantification on Arbitrary Sparse Samples <i>Rick Archibald, Oak Ridge National Laboratory, USA</i> | Monte-Carlo Simulations of Dipolar Interactions in Random Nanogranular Magnetic Systems <i>Mohammad Elhilo, University of Bahrain, Bahrain</i> |
| 12:00 - 12:30 | Monotone Operator Theory and Applications to Hyperbolic PDE's <i>Mohammad Rammaha, University of Nebraska-Lincoln, USA</i> | Heat Generation in Solids and the Prediction of Thermal Conductivity in Thin Dielectric Films using Heat Conduction Models <i>Mohammad Abu-Samreh, Al-Quds University, Palestine</i> |
| 12:30 - | | |



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|---|--|--|
| 0 1 : 4 0 | Lunch Break | |
| 0 1 : 4 0 - 0 2 : 2 0 Plenary Talk Chair: Ahmed Khamayseh | Unstructured Mesh Methods in Lagrangian Biomedical Fluid-Structure Interaction Problems <i>Andrew Kuprat, Pacific Northwest National Laboratory, USA</i> | |
| Parallel Sessions | Mathematics Chair: Bassam Manasrah | Physics Chair: Othman Zalloum |
| 0 2 : 2 0 - 0 2 : 4 0 | The Story of an Equation-The Balsius Equation <i>Fathi Allan, United Arab Emirates University, UAE</i> | Two-State Operation in Quantum dot Lasers <i>Muayad Abu-Saa, Vrije Universiteit Brussel, Belgium</i> |
| 0 2 : 4 0 - 0 3 : 0 0 | On the Annihilator Graph of a Commutative Ring <i>Ayman Badawi, American University of Sharjah, UAE</i> | Thermoelectric Effects in Layered Organic Conductors in Strong Magnetic Field <i>Raed Hasan, Birzeit University, Palestine</i> |
| 0 3 : 0 0 - 0 3 : 2 0 | Some Computations on Projective Modules over the ring of Polynomials over Division Rings <i>Iyad Alhribat, Palestine Polytechnic University, Palestine</i> | Network Theory Where Microelectronics Meet Mathematics <i>Falah Awwad, United Arab Emirates University, UAE</i> |
| 0 3 : 2 0 - 0 3 : 4 0 | Minimum Semi-definite Rank of Graphs <i>Yusra Sharawi, Sultan Qaboos University, Oman</i> | A Three-Dimensional Magnetic Force Solution Between Axially Polarized Permanent Magnet Cylinders for Different Magnetic Arrangement <i>Abdel-Karim Daud, Palestine Polytechnic University, Palestine</i> |
| 0 3 : 4 0 - 0 4 : 0 0 | Afternoon Break | |
| Parallel Sessions | Statistics Chair: Nureddin Rabie | Physics Chair: Ayman Sweiti |
| 0 4 : 0 0 - 0 4 : 2 0 | Fitting General Linear Model for Longitudinal Survey Data Under Unequal Probability of Selection <i>Abdulhakeem Eideh, Al-Quds University, Palestine</i> | Fission Barriers from Actinides to Superheavies <i>Hazem Abusara, Palestine Polytechnic University, Palestine</i> |
| 0 4 : 2 0 - 0 4 : 4 0 | Informative Bayesian Inference for the Skew Normal Distribution <i>Antonio Canale, University of Turin, Italy</i> | Prospects of Testing Modified Newtonian Dynamics with LISA Pathfinder <i>Martin Feix, Technion, Haifa</i> |



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| 0 4 : 4 0 - 0 5 : 0 0 | Fitting Age-Specific Fertility Rates by a Skew-Symmetric Probability Density Function <i>Bruno Scarpa, Università di Padova, Italy</i> | Integral Inversions in the D-dimensional Space <i>Roland Lombard, Institute de Physique Nucléaire, France</i> |
| 0 5 : 0 0 - 0 5 : 2 0 | Tests for Random Agreement in Cluster Analysis <i>Monjed Samuh, Palestine Polytechnic University, Palestine</i> | Determination of Quantum Mechanical Resonances by the Optimized Spectral Approach <i>Anna Okopinska, Jan Kochanowski University, Poland</i> |
| 0 5 : 3 0 - 0 8 : 0 0 | Hebron Guests' Tour | |
| 0 8 : 0 0 - 1 0 : 0 0 | Dinner and Entertainment | |



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Conference Agenda

Day 2, TUESDAY, July17, 2012

| | | |
|---|---|---|
| 08 : 00 - 08 : 30 | Transportation from Hotels to PPU | |
| 08 : 30 - 08 : 50 | Reception and Registration | |
| 08 : 50 - 09 : 30 Plenary Talk Chair: Ibrahim Al-Masri | Application of Singularity Theory to Discrete Planar Dynamical Systems <i>Saber Elaydi, Trinity University, USA</i> | |
| Parallel Sessions | Mathematics Chair: Yousef Zahaykah | Physics Chair: Adi Nusser |
| 09 : 30 - 10 : 00 | Dynamics of K^{th} Order Rational Difference Equation <i>Mohammad Saleh, Birzeit University, Palestine</i> | Density Functional Theory on a Lattice: Transport Through a Quantum dot <i>Ulrich Eckern, University of Augsburg, Germany</i> |
| 10 : 00 - 10 : 30 | Bosonization for Dual Quasi-Bialgebras and Preantipode <i>Alice Pavarin, University of Padova, Italy</i> | PIC Relativistic Code to Simulate Earth's Bow Shock <i>Suleiman Baraka, AL-Aqsa University - Gaza, Palestine (via Skype)</i> |
| 10 : 30 - 11 : 00 | The Concept of q-Cycles and Some of its Applications <i>Vichian Laohakosol, Kasetsart University, Thailand</i> | Fractional Calculus and their Applications in Physics <i>Sami Muslih, Al-Azhar University-Gaza, Palestine (via Skype)</i> |
| 11 : 00 - 11 : 20 | Morning Break | |
| Parallel Sessions | Mathematics Chair: Abdulhakeem Eideh | Physics Chair: Sami AL-Jaber |
| 11 : 20 - 11 : 40 | HYPO4D: A Space-Time Parallelized Solver for Finding Unstable Periodic Orbits in Turbulent Flow <i>Derek Groen, University College London, United Kingdom</i> | Optical Measurements of Two-Layer System Considering Chromatic correction <i>Hala El-Khozondar, Islamic University of Gaza, Palestine (via Skype)</i> |
| 11 : 40 - 12 : 00 | Modeling and Simulation of a Laser-Induced Cavitation Bubble with Phase | Soleil Emittance Reduction using a Robinson Wiggler |



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| | Transition Ali Zein, Palestine Polytechnic University, Palestine | Hadil Abualrob, University of Paris-Sud, France |
| 1 2 : 0 0 - 1 2 : 2 0 | New Results on the Collatz Conjecture Henrique Oliveira, Technical university of Lisbon, Portugal | Dual Fuel Performance and Engine Noise using Variable LPG Composition Fuel Emad Elnajjar, United Arab Emirates University, UAE |
| 1 1 : 2 0 - 1 2 : 4 0 | A Monte-Carlo Simulation Study of a Folded Kernel-based Goodness-of-Fit Test Elias Dabeet, Arab American University -Jenin, Palestine | Effect of Salt on Electric Double Layer of Spherical Macroion Mirfat Amleh, Al-Quds university, Palestine |
| 1 2 : 4 0 - 0 2 : 0 0 | Lunch Break | |
| 0 2 : 0 0 - 0 2 : 4 0 Plenary Talk Chair: Amjad Barham | Einstein for Everyone Naresh Dadhich, Inter-University Centre for Astronomy and Astrophysics, India | |
| Parallel Sessions | Mathematics Chair: Peter Coveney | Mathematics - Gaza Chair: Suleiman Baraka |
| 0 2 : 4 0 - 0 3 : 0 0 | On the Oscillation of Bounded Solutions of Third-Order Nonlinear Delay Differential Equations Taha Abu-Kaff, Al-Quds University, Palestine | Creating Effect Algebras Eissa Habil, Islamic University of Gaza, Palestine (via Skype) |
| 0 3 : 0 0 - 0 3 : 2 0 | Latest Characterization of Periodic Solutions of Periodic Difference Equations Ziyad Al-Sharawi, Sultan Qaboos University, Oman | On Nonstandard Topology Ahmed Ghneim, Islamic University of Gaza, Palestine (via Skype) |
| 0 3 : 2 0 - 0 3 : 4 0 | An Approach to Obtain Asymptotic Expansions of some Functional Iterates Sukrawan Mavecha, King Mongkut's Institute of Technology Ladkrabang, Thailand | On the Influential Points in Error-in-Variables Model for Directional Data Ali Abu-Zaid, Al-Azhar University-Gaza, Palestine (via Skype) |



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| 0 3 : 4 0 - 0 4 : 0 0 | <p>Accelerating Sensitivity Computation using Collocation on Finite Elements in NMPC <i>Jasem Tamimi, Palestine Polytechnic University, Palestine</i></p> | <p>Reliability of Connected (1,2) or (2,1)- out- of-(m,n): F Linear & Circular Lattice Systems using Markov Chains <i>Imad Nashwan, Al-Quds Open University-Gaza, Palestine (via Skype)</i></p> |
| 0 4 : 0 0 - 0 4 : 1 5 | Afternoon Break | |
| Parallel Sessions | Mathematics Chair: Mohammad Saleh | Physics Chair: Musa Abu-Teir |
| 0 4 : 1 5 - 0 4 : 3 0 | <p>Norm Attaining Operators <i>Yousef Manasrah, Hebron University, Palestine</i></p> | <p>Square Waves in Semiconductor Ring Laser Subject to Optical Feedback <i>Lilia Mashal, Vrije Universiteit Brussel, Belgium</i></p> |
| 0 4 : 3 0 - 0 4 : 4 5 | <p>An Algebraic Approach to Fractional Derivatives <i>Nancy Maraqaq, Al-Quds University, Palestine</i></p> | <p>Modeling of Wind Energy in some Areas of Palestine <i>Husain Alsamamra, Al-Quds university, Palestine</i></p> |
| 0 4 : 4 5 - 0 5 : 0 0 | <p>Variety of Some Finite Algebra <i>Manal Syaj, Palestine Polytechnic University, Palestine</i></p> | <p>Dynamics of Human Decisions <i>Abdelrahim Mousa, University of Porto, Portugal</i></p> |
| 0 5 : 0 0 - 0 5 : 1 5 | <p>Bad Boundary Behavior in the de Branges-Rovnyak Spaces <i>Muath Karaki, University of Lyon 1, France</i></p> | <p>Indoor Radon Concentration Levels in 33 Schools Situated in Five Districts of the North Eastern of Hebron Province - Palestine <i>Kaleel Thabayneh, Hebron University, Palestine</i></p> |
| 0 5 : 1 5 - 0 5 : 3 0 | <p>On Subclasses of Multivalent Functions Involving the Komatu Integral Operator <i>Reem Hamdan, Palestine Polytechnic University, Palestine</i></p> | <p>Record Values from Marshall-Olkin Exponential Distribution <i>Mukhtar Salah, Al-Quds Open University, Palestine</i></p> |
| 0 5 : 3 0 - 0 8 : 0 0 | Bethlehem Guests' Tour | |
| 0 8 : 3 0 - 1 0 : 0 0 | Dinner and Entertainment | |



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Day 3, WEDNESDAY, July18, 2012

| | | |
|--|---|---|
| 08 : 00 - 08 : 30 | Transportation from Hotels to PPU | |
| 08 : 30 - 08 : 50 | Reception and Registration | |
| 08 : 50 - 09 : 30 | A Continuous Structured Model for Amphibians: Numerical Approximation and Parameter Estimation <i>Azmy Ackleh, University of Louisiana at Lafayette, USA</i> | |
| Plenary Talk Chair: Saber Elaydi | | |
| Parallel Sessions | Mathematics Chair: Iyad Suwan | Physics Chair: Hazem Abu-Sarah |
| 09 : 30 - 10 : 00 | Global Well-Posedness of an Inviscid Three-Dimensional Pseudo-Hasegawa-Mima Model <i>Edriss Titi, University of California - Irvine, USA</i> | Ion Outflow at High-Altitude and High-Latitude Region: The effect of Wave - Particle Interaction <i>Imad Barghouthi, Al-Quds University, Palestine</i> |
| 10 : 00 - 10 : 30 | On the Stability of Evolution Galerkin Schemes Applied to a Multi-Dimensional Wave Equation System <i>Yousef Zahaykah, Al-Quds University, Palestine</i> | Tuning Optical, Magnetic and Other Interesting Properties of Nanoalloys for Energy Applications <i>Talat Rahman, University of Central Florida, USA</i> |
| 10 : 30 - 11 : 00 | Towards Quantifying the Impact of Blood Rheology Model on Shear Stress Estimates Throughout the Cardiac Cycle <i>Peter Coveney, University College London, United Kingdom</i> | Future Galaxy Surveys and Possible Constraints on the Underlying Theory of Gravity on Large Scales <i>Adi Nusser, Technion, Haifa</i> |
| 11 : 00 - 11 : 20 | Morning Break | |
| Parallel Sessions | Mathematics Chair: Safa Hamed | Physics Chair: Mohammad Abu-Samreh |
| 11 : 20 - 11 : 40 | Distributed Multiscale Simulations of Layered Nanocomposites <i>Derek Groen, University College London, United Kingdom</i> | Effect of Sample Temperature on Photoluminescence (PL) Centers in Er-Doped SiyO1-y (y≥0.32) Thin Films <i>Othman Zalloum, Palestine Polytechnic University, Palestine</i> |



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|---|---|---|
| 1 1 : 4 0 - 1 2 : 0 0 | The Tribonacci p-Numbers and the Tibonacci p-Triangle <i>Kantaphon Kuhapatanakul, Kasetsart University, Thailand</i> | Characterizing Amorphous-Crystal Switching of Ge₂Sb₂Te₅ Phase Change Material <i>Naser Qamhieh, United Arab Emirates University, UAE</i> |
| 1 2 : 0 0 - 1 2 : 2 0 | Non-Hermitian Potentials with Real Eigenvalues by Asymptotic Iteration Method <i>Marwan Elkawni, Al-Quds Open University, Palestine</i> | Electrical Transport in Graphene Layers <i>Hussein Shanak, Palestine Technical University, Palestine</i> |
| 1 2 : 2 0 - 1 2 : 4 0 | Local Huber M-Estimates with Regularization <i>Hani Kabajah, Birzeit University, Palestine</i> | Price Impact and Market Indifference Prices with Power Utilities <i>Nadim Sah, Technische Universität Berlin, Germany</i> |
| 1 2 : 4 0 - 0 2 : 0 0 | Lunch Break | |
| 0 2 : 0 0 - 0 2 : 4 0 Plenary Talk Chair: Ulrich Eckern | Review of Optical Left-Handed Waveguide Sensors <i>Mohammed Shabat, Islamic University of Gaza, Palestine</i> <i>(via Skype)</i> | |
| Parallel Sessions | Mathematics Chair: Yousef Manasrah | Physics Chair: Mohammad Elhilo |
| 0 2 : 4 0 - 0 3 : 0 0 | A Unified Continued Fraction Algorithm in a Non-Archimedean Field <i>Jittinart Rattanamoong, Chulalongkorn University, Thailand</i> | Detecting Blood Vessels in the Retinal Images <i>Hadi Hamad, Università degli Studi di Palermo, Italy</i> |
| 0 3 : 0 0 - 0 3 : 2 0 | Productivity of P-Spaces <i>Yousef Bdeir, Al-Quds university, Palestine</i> | Charge-State Distributions of 0.4-2.0 MeV 4He Ions Backscattered from Kr Gas Target <i>Hanan Sa'adeh, King Abdulaziz University, Saudi Arabia</i> |
| 0 3 : 2 0 - 0 3 : 4 0 | Asymptotic Behaviour of Solutions of a Second-Order Nonlinear Differential Equation <i>Maher Qarawani, Al-Quds Open University, Palestine</i> | Fragility of Ge₄₀S₆₀ Glass Forming Liquid <i>Ghassan Saffarini, An-Najah National University, Palestine</i> |
| 0 3 : 4 0 - | Parametric Maximum Likelihood Estimation of Cure Fraction Using | Memristor: Modeling the Underlying Device Physics and Application |



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| 0 4 : 0 0 | Interval-Censored Data <i>Bader Aljawadi, Hebron University, Palestine</i> | Baker Mohammad, Khalifa <i>University of Science Technology, UAE</i> |
| 0 4 : 0 0 - 0 4 : 1 5 | Afternoon Break | |
| Parallel Sessions | Mathematics Chair: Fathi Allan | Mathematics Chair: Henrique Oliveira |
| 0 4 : 1 5 - 0 4 : 3 0 | A Generalized Synthetic Division <i>Abdelhaleem Zaiqan, Arab American University -Jenin, Palestine</i> | The Number of Periodic Solutions of Some Analytic Equations of Abel-Type <i>Naeem Alkoumi, Birzeit University, Palestine</i> |
| 0 4 : 3 0 - 0 4 : 4 5 | Some Norm Inequalities for Kronecker and Hadamard Products <i>Alaa Saleh, Al-Quds University, Palestine</i> | Conformal Mapping for Parametric Surfaces <i>Nader Alrjoub, Palestine Polytechnic University, Palestine</i> |
| 0 4 : 4 5 - 0 5 : 0 0 | Special Boundary Integral Equations for Potential Problems in Multi-Dimensional Regions <i>Omar Abuloha, Al-Quds university, Palestine</i> | A Semi-Numerical Analytical Solution of Partial Differential Equations Using Reduced Differential Transformation Method <i>Nizar Hafiz, Arab American University-Jenin, Palestine</i> |
| 0 5 : 0 0 - 0 5 : 1 5 | The Positivity Problem for Fifth-Order Linear Recurrence Sequences is Decidable <i>Pinthira Tangsupphathawat, Srinakharinwirot University, Thailand</i> | An Inverse Problem Arising from Economics <i>Marwan Aloqeili, Birzeit University, Palestine</i> |
| 0 5 : 1 5 - 0 5 : 3 0 | A New Method for Solving a Non-Homogeneous Cauchy-Euler Differential Equation <i>Bilal Karaki, Palestine Polytechnic University, Palestine</i> | Reflection on Information Sciences and Pedagogy <i>Nabeel Al-Qirim, United Arab Emirates University, UAE</i> |
| 0 5 : 3 0 - 0 6 : 3 0 | Business Meeting | |
| 0 6 : 3 0 - 0 8 : 0 0 | Selected Local Tour | |
| 0 8 : 0 0 - | Dinner and Recognition Awards | |



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