



**Program and Schedule
of Parallel Sessions**



MSP Schedule of Activities

18 May 2015

| | | |
|-------------------|---|--|
| 07:30am - 09:00am | Registration | Convention Center |
| 09:00am - 09:40am | Opening Ceremony National Anthem Invocation Welcome Remarks | Convention Center Jose Maria P. Balmaceda <i>President, MSP</i> Miriam E. Pascua <i>President, MMSU</i> |
| 09:40am - 10:25am | Plenary Talk 1 <i>Moderator: Fidel R. Nemenzo</i> <i>Venue: Convention Center</i> | Error-Correcting Codes for Cryptography Jon-Lark Kim <i>Sogang University</i> |
| 10:25am - 10:45am | Break | |
| 10:45am - 11:30am | Plenary Talk 2 <i>Moderator: Elvira P. de Lara-Tuprio</i> <i>Venue: Convention Center</i> | On Convergence in Distribution using Stein's Method and Malliavin Calculus Richard B. Eden <i>Ateneo de Manila University</i> |
| 11:30am - 12:30pm | Lunch Break | |
| 12:30pm - 01:30pm | Poster Session | Convention Center |
| 01:30pm - 05:30pm | Parallel Sessions Algebra Analysis Applied Mathematics 1 Applied Mathematics 2 Graph Theory and Combinatorics | Meeting Room 1 Meeting Room 2 Convention Center Meeting Room 3 Meeting Room 4 |
| 06:30pm | Conference Dinner | Malacañang of the North |



19 May 2015

| | | |
|-------------------|--|---|
| 08:30am - 12:30pm | Parallel Sessions Algebra Analysis Applied Mathematics Graph Theory and Combinatorics Math Education | Meeting Room 1 Meeting Room 2 Meeting Room 3 Meeting Room 4 Convention Center |
| 12:30pm - 01:30pm | Lunch Break | |
| 01:30pm - 02:15pm | Plenary Talk 3 <i>Moderator: Jose Ernie C. Lope</i> <i>Venue: Convention Center</i> | <i>Bubbles, Grain boundaries, and more: Volume-preserving Curvature-driven Interface Motions</i> Rhudaina Z. Mohammad <i>Western Mindanao State University</i> |
| 02:15pm - 03:00pm | Plenary Talk 4 <i>Moderator: Marian P. Roque</i> <i>Venue: Convention Center</i> | <i>Phylogenetic Trees and Networks: Tools for Understanding the Evolution of Things</i> Richard S. Lemence <i>University of the Philippines - Diliman</i> |
| 03:00pm - 04:30pm | Business Meeting | |
| 04:30pm | Closing Ceremony | |



Parallel Sessions Day I

May 18, 2015

| Time | Algebra <i>Meeting Room 1</i> <i>Moderator: Ma. Nerissa M. Abara</i> | Analysis <i>Meeting Room 2</i> <i>Moderator: Jonald P. Fenecios</i> | Applied Mathematics 1 <i>Convention Center</i> <i>Moderator: Jose Maria L. Escaner IV</i> | Applied Mathematics 2 <i>Meeting Room 3</i> <i>Moderator: Kristine Joy Carpio</i> | Graph Theory and Combinatorics <i>Meeting Room 4</i> <i>Moderator: Agnes E. Garciano</i> |
|-------------------|--|---|---|--|--|
| 01:30pm - 01:50pm | On the Vanishing of Cohomologies of p -adic Galois Representations Associated with Elliptic Curves <i>Jerome T. Dimabayao</i> | Shape Optimization Techniques for Solving the Shape Derivative of the Kohn-Vogelius Objective Functional <i>Julius Fergy T. Rabago, Jerico B. Bacani</i> | A Bat Algorithm Approach to Demand Estimation Models <i>Leo Manuel B. Estaña, Eveyth P. Deligero</i> | Robustified Propensity Score Weights of Doubly Robust Estimator: A Pharmacoeconomics Study Application <i>Angela Fel A. Padecio</i> | A Combinatorial Interpretation of a q -Analogue of the Non-Central Stirling Numbers of the Second Kind in the Context of A -Tableaux <i>Ednelyn Ranas-Cantallopez, Charles B. Montero, Roberto B. Corcino</i> |
| 01:50pm - 02:10pm | On Schur Parameters of Isometric Arnoldi Process and Szegő Recursion <i>Jobert J. Dela Cruz</i> | Parallel Travel and Preservation of Covariant Differentiation on Spacetime Manifolds <i>Jade T. Ventura, Richard S. Lemence</i> | Dynamic Passenger Queuing Model of Philippine Metro Rail Transit <i>John Justin C. Mesias, Fredegusto Guido P. David</i> | Insight on Regulating the Growth and Migration of Glioblastoma Cells: An Optimal Control Theory Approach <i>Aurelio A. de los Reyes V</i> | On the Connected Cototal Domination Number of Graphs Under Some Binary Operations <i>Shiena Mae P. Balbon, Rolito G. Eballe</i> |
| 02:10pm - 02:30pm | Construction of Cheating-Immune Secret Sharing Schemes <i>Say OL</i> | Parallel Transport on Spheres <i>John Gabriel Pelias, Jose Maria P. Balmaceda</i> | Nash Equilibria in a Multiple Stage Inspection Game <i>Shera Marie C. Pausang, Yvette Fajardo-Lim</i> | On Protein Structure Prediction using the Hydrophobic-Polar Model on a Tetrahedral Lattice <i>Ryan Paul Gozum, Kristoffer Marion Mendoza, John Justine Villar, Jaymar Soriano, Adrian Roy L. Valdez</i> | Weight-Equitable Orthogonal Partitions of Red and Blue Points in the Plane Lattice <i>Jude C. Buot</i> |
| 02:30pm - 02:50pm | Cohomology and Diffraction of Substitution Tiling Spaces <i>Eden Delight P. Miro</i> | Periodic Solutions of an Impulsive Fractional Differential Equation <i>Johnatan S. Pimentel</i> | Modeling and Simulation of Filipino Driving <i>Elemar E. Teje</i> | Stability of the Disease-free Equilibrium of a Delayed Tuberculosis Model <i>Roxanne Daphne O. Lapaan</i> | On Poly-Euler Polynomials with Two Parameters <i>Roberto B. Corcino Hassan Jolany</i> |
| 02:50pm - 03:10pm | Duality and Orthogonality in TD Pairs of Shape $(1,2,1)$ <i>Melvin A. Vidar</i> | Geometric Structures Arising from Representations of Finite Groups <i>Chrizaldy Neil C. Mañibo, Job A. Nable</i> | Some Approximations on the Probability of Ruin and the Inverse Ruin Problem <i>Lu Kevin S. Ong</i> | Parameter Estimation using the Firefly Algorithm for Biochemical Networks Modeled in the S-system Formalism <i>Raquel C. Cajayon, Carlene P. Arceo, Cheryl O. Talaue, Eduardo R. Mendoza</i> | Statistics on Laguerre Configurations and Rook Placements <i>Ken Joffaniel M. Gonzales, Richell O. Celeste, Roberto B. Corcino</i> |
| 03:10pm - 03:30pm | Break | | | | |

| Time | Algebra <i>Meeting Room 1</i> <i>Moderator: Eden Delight P. Miro</i> | Analysis <i>Meeting Room 2</i> <i>Moderator: Johnatan S. Pimentel</i> | Applied Mathematics 1 <i>Convention Center</i> <i>Moderator: Daisy M. Quisel</i> | Applied Mathematics 2 <i>Meeting Room 3</i> <i>Moderator: Lorna S. Almocera</i> | Graph Theory and Combinatorics <i>Meeting Room 4</i> <i>Moderator: Roberto B. Corcino</i> |
|-------------------|--|--|---|--|--|
| 03:30pm - 03:50pm | Algebraic Analysis of Pattern Structure of the Uwes Pinakawha <i>Ma. Louise Antonette N. Delas Peñas</i> | A Multi-Phase Segmentation Approach to the EIT Problem <i>Renier Mendoza, Stephen Keeling</i> | Adjustments in Valuations and Price Control of Financial Instruments After the Global Financial Crisis: The International Investment Banks' Case <i>Engezbent Mirasol Himang</i> | On Incorporating Core-Attachment Scheme for Protein Complex Detection on Weighted Protein-Protein Interaction Networks <i>Jerome Cary Beltran, Catalina Montes, John Justine Villar, Jaymar Soriano, Adrian Roy L. Valdez</i> | $G(A, B)$ -construction of Graphs over Groups and Rings <i>Neil Jerome A. Egarguin, Rolando G. Panopio</i> |
| 03:50pm - 04:10pm | Latin Square Graphs of Finite Groups <i>Maria Carmen V. Amarra</i> | On Pre- I -open Sets in Ideal Tritopological Spaces <i>Lezel N. Mernilo, Randy L. Caga-anan</i> | Adaptation of the Hull-White Model on Pricing Asian Options <i>Daryl Allen Saddi</i> | Probabilistic Gene Network <i>Kristine Joy Carpio</i> | A p, q -Analogue of the Non-Central Bell Numbers <i>Omar I. Cauntongan, Charles B. Montero</i> |
| 04:10pm - 04:30pm | Conjugation Action on the Family of Minimum \mathcal{D} -sets of a Group <i>Joris N. Buloron, Jose Maria P. Balmaceda</i> | Some Properties of I and I^* -convergent Double Sequences <i>Glee Ann R. Lumauag, Alnar L. Detalla</i> | Calculating the VaR of Fixed-Income Securities and Interest Rate Swaps Using Yield Curve Bootstrapping Technique <i>Jeric C. Briones, Juan Carlo F. Mallari</i> | Stability and Bifurcation Analysis of Delayed Three-Species Predator-Prey Model with Non-Monotonic Functional Response <i>Aldrin T. Balilo, Juancho A. Collera</i> | Smarandache Skew-Cyclic Determinant Sequences with Fibonacci and Lucas Numbers <i>Aldous Cesar F. Bueno</i> |
| 04:30pm - 04:50pm | The Sum of Two Coninvolutory Matrices <i>Daryl Q. Granario, Ma. Nerissa M. Abara</i> | On a Query by G. Myerson on First Baire Class Functions <i>Jonald P. Fenecios</i> | Portfolio Optimization in a Regime Switching Model <i>Adrian Roy L. Valdez, Tiziano Vargiolu</i> | Dynamics of Random Waves Approaching Vegetation Fields <i>Victor Andrew A. Antonio</i> | Secure Convex Dominating Sets in Products of Graphs <i>Enrico L. Enriquez, Sergio R. Canoy, Jr.</i> |
| 04:50pm - 05:10pm | On Hyper B-Algebra <i>Joemar C. Endam</i> | On the Solvability of a System Involving A Singular Equation of Gerard-Tahara Type of Partial Differential Equation <i>Marc Alvin R. Ermino, Jose Ernie C. Lope</i> | Actuarial Premiums for Last-Survivor Status under Short-term Dependence <i>Jose Maria L. Escaner IV, Joseph D. Betansos</i> | Stability Analysis of the ODE Model Representation of Amyloidogenic Processing in Alzheimer's Disease in the Presence of SORLA <i>Jan Harold M. Alcantara, Angelyn R. Lao, Leonar Aquino-Ruivivar</i> | On the Sigma Chromatic Number of the Join of the Two Sigma 2-colorable Graphs <i>Maria Czarina T. Lagura, Agnes D. Garciano, Reginaldo M. Marcelo</i> |
| 05:10pm - 05:30pm | | | On the Vector Recursion Algorithm for Pricing Discrete Barrier Options <i>Dennis G. Llemit</i> | Uniform Persistence of Species in an Aquatic Population System <i>Alexis Erich S. Almocera, Sze-Bi Hsu, Polly W. Sy</i> | |



Parallel Sessions Day 2

May 19, 2015

| Time | Algebra <i>Meeting Room 1</i> <i>Moderator: Jocelyn P. Vilela</i> | Analysis <i>Meeting Room 2</i> <i>Moderator: Job A. Nable</i> | Applied Mathematics <i>Meeting Room 3</i> <i>Moderator: Joel M. Addawe</i> | Graph Theory and Combinatorics <i>Meeting Room 4</i> <i>Moderator: Cristina B. Corcino</i> | Math Education <i>Convention Center</i> <i>Moderator: Ma. Louise Antonette N. Delas Peñas</i> |
|-------------------|--|---|--|--|--|
| 08:40am - 09:00am | $\mathbb{Z} \left[\frac{1+\sqrt{509}}{2} \right]$ and $\mathbb{Z} \left[\frac{1+\sqrt{521}}{2} \right]$ are Euclidean <i>Vonn Kee G. Wong</i> | Transformation and Differentiation of Henstock-Wiener Integrals <i>Elvira P. de Lara-Tuprio, Varayu Boonpogkrong</i> | Moreau Envelope-Based Model for Compressed Sensing Problem <i>Rommel R. Real, Fredegusto Guido P. David</i> | On the Minimum Size of a Null Spherical t -Design <i>Francis Joseph H. Campeña</i> | Education Technology Trends <i>Erwin Saguinsin</i> <i>CnE Publishing</i> |
| 09:00am - 09:20am | Weavings from 3- and 4-Colorings <i>Margie Baterna, Eden Delight P. Miro</i> | Bounding the Kolmogorov Distance from Non-Normal Distributions in Wiener Space <i>Janree Ruark C. Gatpatan, Richard B. Eden</i> | A Super-Quadratically Convergent Composition of the Two-Point Newton and the Classical Newton Methods <i>Alyssa Camille R. Nano, Ronnie John Pascua</i> | Modular Signatures of Some Autographs <i>Gily V. Magalona, Rolando G. Panopio, Jean O. Loyola, Editha C. Jose</i> | |
| 09:20am - 09:40am | Morphisms on Two Letters that Commute with Some Known Morphisms <i>Alexander J. Balsomo</i> | Blowup Estimates for a Family of Semilinear SPDEs with Time-dependent Coefficients <i>Abner C. Alvarez, José Alfredo López-Mimbela, Nicolas Privault</i> | Bat Algorithm for Parameter Estimation of S-system Models <i>Jayson A. Lucilo, Carlene P. Arceo, Cheryl O. Talaue, Eduardo R. Mendoza</i> | Restrained Weakly Connected Domination in a Graph <i>Amerkhan G. Cabaro, Sergio R. Canoy, Jr.</i> | Using Financial Calculator as a Computing Tool in Financial Mathematics <i>Jumela F. Sarmiento</i> <i>Emmanuel A. Cabral</i> |
| 09:40am - 10:00am | On Self-Dual Cyclic Codes <i>Odessa D. Consorte, Lilibeth D. Valdez</i> | Distribution of the Roots of Third-Order Quasi-Polynomial Equations and Its Applications <i>Juancho A. Collera</i> | Uniform Exponential Stability of a Fluid-Plate Interaction Model Due to Thermal Effects <i>Gilbert Peralta</i> | Completely k -magic Regular Graphs <i>Arnold A. Eniego, Ian June L. Garces</i> | |
| 10:00am - 10:20am | On the Integer Solutions of $ax^2 + 2bxy + cy^2 = z^2$ <i>Julius M. Basilla</i> | On Some Forms of τ_α^* -generalized α -Continuous Map in Topological Spaces <i>Allan N. Cano</i> | Some Numerical Solutions of the Diffusive Lotka Volterra System <i>Hanz Martin C. Cheng</i> | Metric Dimension and Graphic Sets <i>Jose B. Rosario</i> <i>Ian June L. Garces</i> | |
| 10:20am - 10:40am | Break | | | | |

| Time | Algebra <i>Meeting Room 1</i> <i>Moderator: Julius M. Basilla</i> | Analysis <i>Meeting Room 2</i> <i>Moderator: Sergio R. Canoy, Jr.</i> | Applied Mathematics <i>Meeting Room 3</i> <i>Moderator: Editha C. Jose</i> | Graph Theory and Combinatorics <i>Meeting Room 4</i> <i>Moderator: Francis Joseph H. Campeña</i> | Math Education <i>Convention Center</i> <i>Moderator: Recto Rex M. Calingasan</i> |
|-------------------|---|---|--|---|---|
| 10:40am - 11:00am | Transitive Perfect Colorings of 2-Uniform Tilings <i>Lawrence A. Eclarin, Rene P. Felix</i> | Sampling in a Weighted Sobolev Space <i>Nestor G. Acala, Noli N. Reyes</i> | Shuffled Complex Evolution Approach with Differential Evolution for Wind Turbine Output Optimization <i>Joel M. Addawe, Nathaniel Brian B. Micu</i> | The Discrete pq -Distributions and the pq -Factorial Moments <i>Mahid M. Mangontarum, Roberto B. Corcino</i> | A Mathematics Course in the General Education Curriculum <i>Marian P. Roque</i> |
| 11:00am - 11:20am | On Decomposable Hyper KS-Semigroups <i>Georgie F. Tabaranza, Jocelyn P. Vilela</i> | Star-product on Hamiltonian Vector Fields <i>Job A. Nable</i> | Storm Surge Modelling in the Philippine Setting Using ADCIRC+SWAN through Parallel Computing <i>Tricia Mae Esguerra, Ryan Jacinto, Joshua Frankie B. Rayo, Vena Pearl Bongolan, Dustin Eric Ricio</i> | Hadarnard Product, Integer Composition and Information Spread on Cycle Graphs <i>Raymond R. Lopus</i> | |
| 11:20am - 11:40am | On the q th root of a p -adic number <i>Janus C. Aban, Julius M. Basilla</i> | A Stability Result for Fixed Point Iteration in Partial Metric Space <i>Priscilla S. Macansantos</i> | Conceptualizing Minuet in G Major through Mathematics and the Generalize Interval System <i>Katrina E. Belleza</i> | Cycle and Path Extendability of $K_{1,3}$ -free Join of Graphs <i>Jeric S. Alcala, Rolando E. Ramos</i> | |
| 11:40am - 12:00pm | Homogeneous Weight on \mathbb{Z}_{2p} from Generating Character and Some Bounds <i>John Mark T. Lampos</i> | Itô-Henstock Integral for the Operator-Valued Stochastic Process <i>Mhelmar A. Labendia, Timothy Robin Y. Teng, Elvira P. de Lara-Tuprio</i> | Finding Cohesive Subgroups of a Network Using k-plex model: An Intelligent Water Drops (IWD) Algorithm Approach <i>Kimberly Hazel B. Camino, Neil Marc Z. Sordilla</i> | Equivalent Asymptotic Formulas for r -Stirling Numbers of the First Kind <i>Cristina B. Corcino</i> | Updates from the CHED Technical Committee for Mathematics: The Proposed New BS Math and BS Applied Math Curricula <i>Jose Maria P. Balmaceda</i> |
| 12:00pm - 12:20pm | Homomorphic Properties of Gamma Semimodules over Gamma Semirings <i>Shirley Mae A. Galindo, Gaudencio C. Petalcorin, Jr.</i> | / | A Nomenclature for the Standard Linguistic Description of the Kinematics of Networks <i>Jaderick P. Pabico, Eliezar A. Albacea</i> | A New q -Analogue of Ruci'nski-Voigt Numbers <i>Wardah M. Bent-Usman, Mahid M. Mangontarum, Charles B. Montero</i> | |