

# Program: ICLAA 2017

**December 11, 2017 (Monday)**

09:00 - 09:10 K. Manjvantha Prasad and Ravindra B. Bapat: Welcome & Overview of the conference

*SESSION 1; Chair Person: Ravindra B Bapat*

09:10 - 10:10 Stephen James Kirkland: Markov Chains as Tools for Analysing Graphs I

10:10 - 10:50 Sivaramakrishnan Sivasubramanian: The arithmetic Tutte polynomial of two matrices associated to trees

10:50 - 11:10 **Tea Break**

*SESSION 2; Chair Person: Michael Tsatsomeros*

11:10 - 11:50 S K Neogy: On testing matrices with nonnegative principal

11:50 - 12:30 Rafikul Alam: Fiedler companion pencils for rational matrix functions and the recovery of minimal bases and minimal indices"

12:30 - 13:10 K C Sivakumar: Nonnegative/nonpositive generalized inverses and applications in LCP

13:10 - 14:30 **Lunch Break**

*SESSION 3; Chair Person: S. Arumugam*

14:30 - 15:30 Sharad S Sane: Some Linear Algebra related questions in the theory of Block Design I

15:30 - 16:00 Matjaz Kovse: Distance matrices of partial cubes

16:00 - 16:20 **Tea Break**

*SESSION 4; Chair Person: Sivaramakrishnan Sivasubramanian*

16:20 - 17:00 S H Kulkarni: Continuity of the pseudospectrum

17:00 - 17:40 Murali K Srinivasan: Eigenvalues and eigenvectors of the perfect matching association scheme

17:40 -18:40 S. Arumugam: Vector spaces associated with graphs

19:15 - 20:00 **Inaugural Day Function of ICLAA 2017**

20:00 - 21:00 **DINNER**

**December 12, 2017 (Tuesday)**

*SESSION 5; Chair Person: TES Raghavan*

09:00 - 10:00 Sharad S Sane: Some Linear Algebra related questions in the theory of Block Design II

10:00 - 11:00 Stephen James Kirkland: Markov Chains as Tools for Analysing Graphs II

11:00 - 11:30 **Tea Break**

11:30 - 13:00 Contributory Talks ( CT - 1)

13:00 - 14:30 **Lunch Break**

*SESSION 6; Chair Person: S K Neogy*

14:30 - 15:30 T E S Raghavan: On completely mixed games

15:30 - 16:10 B V Rajarama Bhat: Two states

16:10 - 16:30 **Tea Break**

16:30 - 18:30 Contributory Talks ( CT - 2)

**December 13, 2017 (Wednesday)**

*SESSION 7; Chair Person: Vasudev Guddattu*

09:00 - 09:40 Simo Puntanen: Upper bounds for the Euclidean distances between the BLUPs"

09:40 - 10:20 Stephen John Haslett: Linear models and sample surveys

10:20 - 11:00 Ebrahim Ghorbani: Eigenvectors of chain graphs

11:00 - 11:30 **Tea Break**

11:30 - 13:00 Contributory Talks ( CT - 3)

13:00 - 14:15 **Lunch Break**

*SESSION 8; Chair Person: Muddappa Seetharama Gowda*

14:15 - 15:00 Ajit Iqbal Singh: Fibonacci fervour in linear algebra and quantum information theory

15:10 - 15:50 Arup Bose: To be announced

16:00 - 19:00 **Cultural Program at Karantha Bhavan, KOTA**

19:00 - 20:00 **Dinner at Karantha Bhavan, KOTA**

**December 14, 2017 (Thursday)**

*SESSION 9; Chair Person: Helmut Leeb*

09:00 - 09:50 Jeffrey Hunter: Mean first passage times in Markov Chains - How best to compute?

09:50 - 10:30 Augustyn Markiewicz: Approximation of covariance matrix by banded Toeplitz matrices

10:30 - 11:10 Martin Singull: The use of antieigenvalues in statistics

11:10 - 11:30 **Tea Break/Photo Session**

11:30 - 13:00 Contributory Talks ( CT - 4)

13:00 - 14:30 **Lunch Break**

*SESSION 10; Chair Person: Asha Kamath*

14:30 - 15:10 Michael Tsatsomeros: Stability and convex hulls of matrix powers

15:10 - 15:50 Muddappa Seetharama Gowda: On the solvability of matrix equations over the semidefinite cone

15:50 - 16:20 Somnath Datta: A combined PLS and negative binomial regression model for inferring association networks from next-generation sequencing count data

16:20 - 16:40 **Tea Break**

16:40 - 18:40 Contributory Talks ( CT - 5)

**December 15, 2017 (Friday)**

**Session 11; Chair Person: Augustyn Markiewicz**

09:00 - 09:50 Helmut Leeb: R-matrix based solution of Schrödinger equations with complex potentials

09:50 - 10:30 Zheng Bing: Condition numbers of the multidimensional total least squares problem

10:30 - 11:10 N Eagambaram: An approach to General Linear Model using hypothetical variables

11:10 - 11:30 **Tea Break**

*SESSION 12; Chair Person: Steve J Kirkland*

11:30 - 12:10 André Leroy: When singular nonnegative matrices are products of non-negative idempotent matrices?

12:10 - 13:00 Sukanta Pati: Inverses of weighted graphs

13:00 - 14:30 **Lunch Break**

*SESSION 13; Chair Person: Simo Puntanen*

14:30 - 15:30 Bhaskara Rao Kopparty: Generalized inverses of infinite matrices

15:30 - 16:15 **Tea Break**

16:15 - 16:45 VALEDICTORY

# Contributory Talks – ICLAA 2017

December 12, 2017 (Tuesday)

*CT 1 – A; Chair Person : Sukanta Pati*

Venue: Bhargava Hall

11:30 – 12:00 Fouzul Atik: On the distance and distance signless Laplacian eigenvalues of graphs and the smallest Gersgorin disc

12:00 – 12:30 Sasmita Barik: On the spectra of bipartite multidigraphs

12:30 – 13:00 Dipti Dubey: On principal pivot transforms of hidden Z matrices

*CT 1 – B; Chair Person : Steve J Kirkland* Venue: Shrihande Hall

11:30 – 12:00 Sachindranath Jayaraman: Nonsingular subspaces of  $M_n(F)$ ,  $F$  a field

12:00 – 12:30 P Sam Johnson: Hypo–EP operators

12:30 – 13:00 Vatsalkumar Nandkishor Mer: Semipositivity of matrices over the  $n$ -dimensional ice cream cone and some related questions

*CT 1 – C; Chair Person : Murali K Srinivasan* Venue: S K Mitra Hall

11:30 – 12:00 Mukesh Kumar Nagar: Immanants of  $q$ -Laplacians of trees

12:00 – 12:30 Anjan Kumar Bhuniya: A topological proof of Ryser’s formula for permanent and a similar formula for determinant of a matrix

12:30 – 13:00 Manami Chatterjee: A relation between Fibonacci numbers and a class of matrices

*CT 2 – A; Chair Person : S. Arumugam* Venue: Bhargava Hall

16:30 – 17:00 Debashis Bhowmik: Semi–equivelar maps on the surface of Euler characteristic  $-2$

17:00 – 17:30 Nirranjan Bora: Study of spectrum of certain multi–parameter spectral problems

17:30 – 18:00 Ranjan Kumar Das: Generalized Fiedler pencils with repetition for polynomial eigenproblems and the recovery of eigenvectors, minimal bases and minimal indices

18:00 – 18:30 Supriyo Dutta: Graph Laplacian quantum states and their properties

*CT 2 – B; Chair Person : K. C. Sivakumar* Venue: Shrihande Hall

16:30 – 17:00 Projesh Nath Choudhury: Matrix Semipositivity Revisited

17:00 – 17:30 Lavanya Suriyamoorthy:  $M$ -operators on partially ordered Banach spaces

17:30 – 18:00 Ramesh G: On absolutely norm attaining paranormal operators

18:00 – 18:30 Kurmayya Tamminana: Comparison results for proper double splittings of rectangular matrices

*CT 2 – C; Chair Person : P Sam Johnson*      Venue: S K Mitra Hall

16:30 – 17:00 Kshittiz Chettri: On spectral relationship of a signed lollipop graph with its underlying cycle

17:00 – 17:30 Balaji V.: Further result on skolem mean labeling

17:30 – 18:00 Shendra Shainy V: Cordial labeling for three star graph

18:00 – 18:30 Ranveer Singh: B–partitions and its application to matrix determinant and permanent

*CT 2 – D; Chair Person : G Sudhakar*      Venue: Berman Hall

16:30 – 17:00 Mohammad Javad Nikmehr: Nilpotent graphs of algebraic structures

17:00 – 17:30 Somnath Paul: Distance Laplacian spectra of graphs obtained by generalization of join and lexicographic product

17:30 – 18:00 Pankaj Kumar Das: Necessary and sufficient conditions for locating repeated solid burst

18:00 – 18:30 Mahendra Kumar Gupta: Causal detectability for linear descriptor systems

**December 13, 2017 (Wednesday)**

*CT 3 – A; Chair Person : S. Sivasubramanian*      Venue: Bhargava Hall

11:30 – 12:00 Soumitra Das: On Osofsky’s 32–elements matrix ring

12:00 – 12:30 Sriparna Chattopadhyay: Laplacian–energy–like invariant of power graphs on certain finite groups

12:30 – 13:00 Biswajit Deb: Reachability problem on graphs by a robot with jump: some recent studies

*CT 3 – B; Chair Person : Martin Singull*      Venue: Shrikhande Hall

11:30 – 12:00 Ashma Dorothy Monteiro: Prediction of survival with inverse probability weighted Weibull models when exposure is quantitative

12:00 – 12:30 Debashish Sharma: Inverse eigenvalue problems for acyclic matrices whose graph is a dense centipede

12:30 – 13:00 Gokulraj S: Strong Z–tensors and tensor complementarity problems

*CT 3 – C; Chair Person : Shreemati Mayya*      Venue: S K Mitra Hall

11:30 – 12:00 M Rajesh Kannan: On distance and Laplacian matrices of a tree with matrix weights

12:00 – 12:30 Niraja Konch: Further results on AZI of connected and unicyclic graph

12:30 – 13:00 Malathi V.: Nordhaus gaddum type sharp bounds for graphs of diameter two

**December 14, 2017 (Thursday)**

*CT 4 – A; Chair Person : Sharad S Sane*      Venue: Bhargava Hall

11:30 – 12:00 B R Rakashith: Some graphs determined by their spectra

12:00 – 12:30 Arindam Ghosh: A note on Jordan derivations over matrix algebras

12:30 – 13:00 Anu Varghese: Bounds for the distance spectral radius of split graphs

*CT 4 – B; Chair Person : Ajit Iqbal Singh*      Venue: Shrikhande Hall

11:30 – 12:00 Ranjit Mehatari: On the adjacency matrix of complex unit gain graphs

12:00 – 12:30 Ramesh Prasad Panda: The Laplacian spectra of power graphs of cyclic and dicyclic finite groups

12:30 – 13:00 Abhyendra Prasad: Study of maps on surfaces using face face incident matrix

*CT 4 – C; Chair Person : Parameshwara Bhat*      Venue: S K Mitra Hall

11:30 – 12:00 T. Anitha: On Laplacian spectrum of reduced power graph of finite cyclic and dihedral groups

12:00 – 12:30 Jyoti Shetty: Some properties of Steinhilber graphs

12:30 – 13:00 M A Sriraj: Partition energy of corona of complete graph and its generalized complements

*CT 5 – A; Chair Person : Pradeep G Bhat*      Venue: Bhargava Hall

16:40 – 17:10 Sushobhan Maity: On the spectrum of the linear dependence graph of finite dimensional vector spaces

17:10 – 17:40 Divya P Shenoy: Determinants in the study of generalized inverses of matrices over commutative ring

17:40 – 18:10 Adenike Olusola Adeniji: Spectrum of full transformation semigroup

*CT 5 – B; Chair Person : André Leroy and Bhaskara Rao Kopparty*

Venue: Shrikhande Hall

16:40 – 17:10 David Raj Micheal: Computational Methods to find Core–EP inverse

17:10 – 17:40 Vinay Madhusudanan:

17:40 – 18:10 Nupur Nandini: Jacobi type identities

18:10 – 18:40 Mojtaba Bakherad: The Jensen–Mercer operator inequality and some its refinements

*CT 5 – C; Chair Person : Kedukodi B Srinivas* Venue: S K Mitra Hall

16:40 – 17:10 Sonu Rani: On the distance spectra and distance Laplacian spectra of graphs with pockets

17:10 – 17:40 Jadav Ganesh: Perturbation of minimum attaining operators

17:40 – 18:10 Dhanajaya Reddy: Minimum matching dominating sets of circular arc graphs

18:10 – 18:40 Ahmad Jafarian: An alternative approach for solving fully fuzzy linear systems based on FNN

*CT 5 – D; Chair Person : Kuncham Syam Prasad* Venue: Berman Hall

16:40 – 17:10 P. G. Romeo: On category of R–modules and duals

17:10 – 17:40 Rajaiah Dasari: Modified triangular and symmetric splitting method for the steady state vector of Markov chains

17:40 – 18:10 Akash Murthy: Incentive structure reorganization to maximize healthcare players' payoff while keeping the healthcare service provider's company solvent