

53rd Southeastern International Conference on Combinatorics, Graph Theory and Computing

March 7-11, 2022

Abstracts

Name	Institution	Abstract
Abueida, Atif	University of Dayton	On decompositions of the Johnson Graph
Agrahari, Gyaneshwar	Youngstown State University	Multiplicative Harmonious Labeling
Agrinsoni, Carlos	University of Puerto Rico, Rio Piedras	A New Absolute Irreducibility Criterion for Multivariate Polynomials over Finite Fields: Its Complexity and Applications
Angeleska, Angela	University of Tampa	On the number of components of coherent partitions
Arrieta, Eddie	Inter American University	Further Classes of Binary, Ternary and Quaternary Error-Correcting Codes for Quantum Computers using the GO-UP and the CSS Construction from Subfield of Subcodes of Some AG Codes and Their Parameters
Asefa-Fufa, Samuel	Addis Ababa University, Ethiopia	3'-GDDs with 4 Groups and Block Size 5
Bajnok, Béla	Gettysburg College	Additive Combinatorics I: An introduction
Bajnok, Béla	Gettysburg College	Additive Combinatorics II: Open questions
Baker, Noah	Davidson College	Combinatorics at the USA Mathematical Olympiad
Balasubramanian, Suman	DePauw University	Triangle Degrees
		Graph Energy of Random Geometric Graphs

Balogh, Jozsef	University of Illinois at Urbana-Champaign	An upper bound on the size of Sidon sets
Barrus, Michael	University of Rhode Island	Cliques in the realization graph of a degree sequence
Benakli, Nadia	New York City College of Technology, CUNY	The Threshold Strong Dimension of Starlike Trees
Benítez-Bobadilla, G.	UNAM	Kernels of (H, k) -reachability
Betten, Anton	Kuwait University	Better CRC Codes for the Internet
Bhoumik, Soumya	Fort Hays State University	On (a, d) -Irregular Total Labelings
Bickle, Allan	Penn State, Altoona	Extremal Decompositions for Nordhaus-Gaddum Theorems
Bjorkman, Beth	Air Force Laboratory	Power Domination Reconfiguration (Part 2)
Blair, Howard	Syracuse University	From coloring the real numbers to constructing wave functions on graphs
Blake, Heather	Davidson College	Hamilton Paths in Domination Reconfiguration Graphs
Boats, Jeffrey	University of Detroit Mercy	Pansophy on Semi Directed Graphs
Bong, Novi	University of Delaware	Properties of the Zero Forcing TAR Reconfiguration Graph
Brewster, Richard	Thompson Rivers University	Switch homomorphisms of (m, n) -mixed graphs
Brimkov, Boris	Slippery Rock University	Coloring Intersection Points of Line Segments
Buchanan, Calum	University of Vermont	Odd covers with complete bipartite graphs
Butler, Steve (3/10, PM)	Iowa State University	Passing drops and descents
Butler, Steve (3/11, AM)	Iowa State University	Hadamard diagonalizable graphs of small order
Byers, Alexis	Youngstown State University	The Down Arrow Ramsey Set
Cameron, Peter	University of St. Andrews	The geometry of diagonal groups Graphs on groups
Carlson, Joshua	Drake University	Zero Forcing TAR Graphs and Polynomials
Charles, Courtney	Howard University	Constructing Clifford Graph Algebras for Caterpillar Trees
Che, Zhongyuan	Penn State University, Beaver Campus	$(k+1)$ -line graphs of k -trees

Choi, Sul-young	Le Moyne College, Syracuse, NY	On the minimum locating number of graphs with a given order
Christiono, Anne	William P. Clements High School	The Wiener index: from trees to graphs with many cut-edges
Cloteaux, Brian	National Institute of Standards and Technology	Graphic Approximation of Integer Sequences
Collins, Karen	Wesleyan University	Representations of Split Graphs using Ferrers Diagrams and Integer Partitions
Connelly, Robert	Cornell University	Universal Rigidity for Ladders on a Line
Curran, Stephen	University of Pittsburgh at Johnstown	Prime labelings on planar grid graphs
D'Andrea, Joy	University of South Florida Sarasota – Manatee	Extension of Fundamental Transversals and Euler's Polyhedron Theorem
Davenport, Dennis	Howard University	Production Matrices for Double Riordan Arrays
Dewar, Sean	Johann Radon Institute (RICAM)	Flexing the 1-skeleton of a Penrose tiling
Doucette, Alexis	Stevens Institute of Technology	j -Multiple, k -Component Order Neighbor Connectivity: An Extension of Multiple Domination
Eakawinrujee, Pannawat	Thammasat University, Thailand	γ -Paired Dominating Graphs of Paths and Cycles
El-Zanati, Saad	Illinois State University	On Hypergraph Designs
Engbers, John	Marquette University	Extremal vertex colorings of graphs
Fehribach, Joseph	WPI	Prime, Composite and Fundamental Kirchhoff Graphs
Fernandez, Blas	University of Primorska	On (almost) 2- γ -homogeneous distance-biregular graphs
Fitzgerald, Michaela	Stonehill College	DNA Self-Assembly: Friendship Graphs
Flagg, Mary	University of St. Thomas	Power Domination Reconfiguration (Part 1)
Freyberg, Bryan	University of Minnesota, Duluth	Red-blue colorings of graphs
Froncek, Dalibor	University of Minnesota Duluth	T-supermagic labeling of $C_m C_n$ with non-Abelian groups
Giles, Colin	University of Vermont	Rainbow Numbers of $[n]$ for Linear Equations

Gnang, Edinah	Johns Hopkins University	A proof of the Kotzig-Ringel-Rosa Conjecture
Gortler, Steven	Harvard University	Reconstructing configurations and graphs from unlabeled distance measurements
Grasegger, Georg	Johannes Kepler University Linz	Graph Splittings and Realization Counting
Gross, Elizabeth	University of Hawaii at Manoa	Maximum likelihood thresholds for Gaussian graphical models
Hadaway, Kimberly	Iowa State University	Enumerating Unit Interval Parking Functions
Hayat, Sakander	GIK Institute of Engineering Sciences and Technology	A spectral characterization for the s -extension of the square grid graphs
Hedtke, Alexa	University of Minnesota, Duluth	Neighborhood face-magic labelings of fans and ladders
Hogben, Leslie	Iowa State University	Zero forcing reconfiguration
Hollering, Benjamin	North Carolina State University	Identifiability in Phylogenetics using Algebraic Matroids
Holliday, Sarah	Kennesaw State University	Representatives of Special Families in Graphs
Horne, Dru	University of Georgia	On Maximum Packings of the Complete 3-Uniform Hypergraph with the Lines of the Pasch Configuration
Ibrahim, Hany	University of Applied Sciences Mittweida	Edge contraction and forbidden induced graphs
Irabor, Kehinde	Concordia University, Wisconsin	Characterization of Symmetric Digraphs whose Underlying Graph is the Complement of its Domination Graph
Jackson, Bill	Queen Mary University of London	Rigidity of Simplicial Complexes
Jacob, Bonnie	Rochester Institute of Technology	Failed zero forcing on trees
Jacob, Jobby	Rochester Institute of Technology	Failed positive semidefinite zero forcing for some classes of graphs
Jiang, Albert	Jasper High School	Algorithms for Computing the Wiener Index in Low Density Graphs and Maximizing the Vertex Weighted Wiener Index

Johnson, Katie	Florida Gulf Coast University	A Combinatorial Model for Merging in Traffic: Connections to Other Combinatorial Objects
Johnson, Pete	Auburn University	Graph-referential list colorings of graphs
Johnston, Daniel	Skidmore College	Rainbow Saturation
Kagan, Michael	Pennsylvania State University	Applications of Resistance Distance in the context of Association Schemes
Khodkar, Abdollah	University of West Georgia	Signed Magic arrays with certain property
Kirkpatrick, Julie N.	Cedar Falls Community School District	On Decompositions of the Complete 4-Uniform Hypergraph into 4-Colorable 3-cycles
Koch, Johnathan	Youngstown State University	Multiplicative Harmonious Labeling
Kong, Nayeong	Indiana University East	Graph Energy of Random Geometric Graphs
Lakshmanan S., Aparna	Cochin University of Science and Technology	Geodesic Leech Graphs
Lau, Gee-Choon	Universiti Teknologi MARA Malaysia	On local antimagic chromatic number of cycle-related join graphs II
Levit, Vadim	Ariel University	Some new upper bounds on the number of maximum independent sets of a graph
Lidicky, Bernard	University of Illinois at Urbana-Champaign and Iowa State University	Maximum Number of Almost Similar Triangles in the Plane
Low, Richard	San Jose State University	Application of the Combinatorial Nullstellensatz to Integer-magic Graph Labelings
Malestein, Justin	University of Oklahoma	Rigidity and Ultrarigidity of Periodic Frameworks
Malic, Goran	Smith College	Combinatorial Resultants and Circuit Polynomials in the Algebraic Rigidity Matroid
Malinovsky, Yaakov	University of Maryland, Baltimore County	On Maximal Scores in Round-Robin Tournaments
Marr, Alison M.	Southwestern University	Domino Antimagic Squares and Rectangles
Martin, Luke	Gonzaga University	Möbius Book Embeddings
Masroor, Razzi	Detroit Country Day School	Generalized matching preclusion for bipartite dual-cube-like networks

McAlpine, Robert	Stonehill College	On Edge-Balance Index Sets of Connected Complete Graphs
McColm, Greg	University of South Florida	Cut-and-Project Graphs
McGinn, Donald	University of West Florida	Completing partial transversals of Cayley tables of Abelian groups
McKee, Terry	Wright State University	Contextualizing Dahlhaus's Characterization of Strongly Chordal Graphs
McKenzie, Thomas	Gonzaga University	Deques on a Torus
Melles, Caroline	United States Naval Academy	Harmonic morphisms of graph products
Mengesha, Demelash	University of the Free State, Bloemfontein, South Africa	Resolving Sets of Directed Cayley Graphs for the Direct Product of Cyclic Groups
Messinger, Margaret-Ellen	Mount Alison University	Eulerian k -dominating graphs
Meyerowitz, Aaron	Florida Atlantic University	Decomposing intervals into triples
Muth, Alicia	Stevens Institute of Technology	The Exceptional Invariance of Distance-1, k -Component Order Neighbor Connectivity
Myers, Timothy	Howard University	A Formal Construction of any Clifford Graph Algebra and Relationships Between Generators of its Different Bases
Mynhardt, Keika	University of Victoria, BC, Canada	Irredundance Graphs, Part 1
Narayan, Darren	Rochester Institute of Technology	The Failed Zero Forcing Number for Trees and Möbius Ladder Graphs
Nava, Joel Barraza	Colorado State University	Creating Goppa codes and MDS codes from curves on cubic surfaces with twenty-seven lines over fields of odd characteristic
Newman, Nicholas	Troy University	Colorings of Complete (p,q) -Uniform Circular Mixed Hypergraphs of Order n
Nishimura, Naomi	University of Waterloo	Parameterized complexity of reconfiguration of atoms
Nixon, Anthony	Lancaster University	Symmetric rigidity theory
Novick, Beth	Clemson University	Irreducible graphs for the threshold strong dimension
O, Suil	SUNY-Korea	Eigenvalues and connected factors in regular multigraphs

Ogawa, Kenjiro	Morimasa Tsuchiya, Tokai University	Double maximal graphs of posets
Olejniczak, Drake	Purdue University, Fort Wayne	Changing the Uniform Spectrum
Ollis, Matt	Emerson College	The Buratti-Horak-Rosa Conjecture Holds for Some Underlying Sets of Size Three
Overbay, Shannon	Gonzaga University	Subhamiltonian Toroidal Graphs
Pach, Peter	Budapest University of Technology	The Alon-Jaeger-Tarsi conjecture via group ring identities
Perry, Katherine	Soka UNiversity of America	Breaking Symmetries: Distinguishing Mycielskian Graphs
Pratihari, Rakhi	University of Tromso, Norway	Weight spectra of Gabidulin rank-metric codes and Betti numbers
Quinn, Jennifer	University of Washington, Tacoma	Epic Math Battles: Counting vs. Matching—The Rematch Pfaffians are Pfine
Quiroz, Daniel	Universidad de Valparaíso, Chile	Characterizing and recognizing exact squares of graphs
Randrianarisoa, Tovohery	Florida Atlantic University	On the Shellability of Ranked Lattice
Redlin, Shayla	University of Waterloo	Enumeration of extensions of the cycle matroid of a complete graph
Reid, T.J.	University of Mississippi	On graphs with a small circuit-spectrum
Rimal, Ramchandra	Middle Tennessee State University	A neural network based models for classification of Autism Spectrum Disorder
Rojas-Osorio, Alejandra	Universidad Nacional de Colombia	Consecutive patterns in Catalan Words and the Descent Distribution
Rombach, Puck	University of Vermont	Symmetry breaking of hypercube families
Roux, Riana	Stellenbosch University, South Africa	Irredundance Graphs, Part 2
Rukavina, Sanja	University of Rijeka, Croatia	On the 2-Y-homogeneous condition of the incidence graphs of 2-designs
Saccoman, John	Seton Hall University	Strongly Regular Multigraphs
Santana, Mike	Grand Valley State University	Disjoint cycles in graphs with restricted independence number
Sarvate, Dinesh	College of Charleston	Some Small 4-GDDs

Schluchter, Steve	George Mason University	Applications of topological graph theory to 2-manifold learning
Schulze, Bernd	Lancaster University	States of self-stress in symmetric frameworks and applications
Sciriha, Irene	University of Malta	Beyond the Symmetries of the Base graphs of a Canonical Double Cover
Seo, Suk Jai	Middle Tennessee State University	Fault-tolerant identifying codes
Sepanski, Mark	Baylor University	Partitions with Designated Summands Not Divisible by 2^i , 2 , and 3^i Modulo 2 , 4 , and 3
Shahrokhi, Farhad	University of North Texas	New results for dominating sets and 2-packings in graphs
Shen, Zhizhang	Plymouth State University	On the Upper Bounds of the g -extra Connectivity of Augmented Hypercubes
Sidman, Jessica	Mount Holyoke College	Line arrangements via rigidity theory
Sims, William	The University of Florida	Graph-edge Pairs with the 3-Dimensional Single Interval Property
Singh, Jagdeep	Louisiana State University	The smallest class of binary matroids closed under direct sums and complements
Sitharam, Meera	University of Florida	Rigidity and Matroid Theory for Circle Contact Structures in the Plane
Stinson, Doug	University of Waterloo	Asymmetric All-or-nothing Transforms
Streinu, Ileana	Smith College	Rigidity Matroids: Combinatorial, Linear and Algebraic
Stucky, Eric Nathan	Univerzita Karlova	Cyclic Actions in Parking Spaces
Su, Hsin-Hao	Stonehill College	On the Integer-Magic Spectra of Dumbbell-Friendship Graphs
Sullivan, Shaun	Florida Gulf Coast University	A Combinatorial Model for Merging in Traffic: Lattice Path Approach
Tagusari, Satoshi	Morimasa Tsuchiya, Tokai University	Upper bound graphs and forbidden subposets
Tefera, Zebene Girma	Addis Ababa University, Ethiopia	3^i -GDDs with 3 Groups and Block Size 5
Theran, Louis	University of St Andrews	General position stresses
Todt, Heiko	Stonehill College	On Edge-Balance Index Sets of Generalized Friendship Graphs
Urizar, David	Florida Atlantic University	Angular Constraints on Bar-and-Joint Frameworks in the Plane

Vaidya, Sanju	Mercy College	Bounds for Vulnerability Measures of Graphs
Velazquez Santiago, Jose W.	University of Puerto Rico, Rio Piedras	LDPC Codes via Bent/Near-Bent Functions: Properties and Applications to NASA Deep Space
Vining, John C. III	Syracuse University	Quantum State Diffusion on a Graph
Walsh, Zach	Louisiana State University	A New Matroid Lift Construction
Wang, Yu	Haikou Pathbreaker Association	A logical proof of the Four Color Problem
Wei, Bing	University of Mississippi	On saturation numbers of double stars
Wierman, John C.	Johns Hopkins University	An improved upper bound for the site percolation threshold of the square lattice
Winters, Steven	University of Wisconsin, Oshkosh	Tours of a Generalized Knight on Rectangular Chessboards
Wisby, Justin	Florida International University	Closed Formulas for total 2-domination of the Cartesian Product of Complete Graphs
Woldemariam, D.	Adama Science and Technology University	A Construction of GDDs with block size 4 with unequal group sizes
Xiao, Kevin	Westwood High School	Wiener Indices of Graphs with Many Cut-Edges
Yatauro, Michael	Penn State, Brandywine	Toughness and the Wiener Index of a Graph
Yerger, Carl	Davidson College	The Existence of a Knight's Tour on the Surface of Rectangular Boxes
Zelege, Melkamu	William Paterson University of New Jersey	On Combinatorial Interpretations of some Elements of the Riordan Group
Zhang, Andrew	Wayzata High School	Gallai's Conjecture in Complete Graphs and "Nearly" Complete Graphs
Zhang, Li	The Citadel	Group Divisible Designs with Three Groups and Block Size 4
Zhao, Cheng	Indiana State Univeristy	A Tie-Breaking Strategy for Star Clusterings of Bipartite Graphs
Zhao, Qinghong	University of Mississippi	Bonds intersecting long paths in k -connected graphs
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