PROJECT 174033: GRAPH THEORY AND MATHEMATICAL PROGRAMMING WITH APPLICATIONS TO CHEMISTRY AND COMPUTER SCIENCE

Publications in 2018.

MONOGRAPHS AND CHAPTERS IN MONOGRAPHS

1. Brualdi, R.A., Carmona, A., van den Driessche, P., Kirkland, S., Stevanovi , D., A Combinatorial Matrix Theory, in (A.M. Encinas, M. Mitjana, eds.), *Advanced courses in Mathematics*, CRM Barcelona, Birkhauser, Basel, Springer, 2018.
2. Stani , Z., Reconstruction Problems in Graph Theory (in Serbian), Mathematical Institute SASA, Belgrade, 2018.

JOURNAL PAPERS

Subproject 1: Spectral graph theory

1. Jovovi , I., Koledin, T., Stani , Z., Trees with Small Spectral Gap, *Ars Mathematica Contemporanea*, 14, pp. 97-107, 2018.
2. Stani , Z., Perturbations in a Graph and its Index, *Discussiones Mathematicae Graph Theory*, 38, pp. 841-852, 2018.
3. Stevanovi , D., Comments on õSome New Results on Energy of Graphsö, *MATCH Commun. Math. Comput. Chem.*, 80(2), pp. 445-447, 2018.
4. Zogi , E., Borovi anin, B., Some New Bounds on Randi Energy, *Kragujevac J. Math.*, 43(3), pp. 393-398, 2019.
5. Zogi , E., Borovi anin, B., Milovanovi , I., Milovanovi , E., On Bounds of Eigenvalues of Randi Vertex-degree-based Adjacency Matrix, *Scientific Publications of the State University of Novi Pazar, Ser A: Appl. Math. Inform. and Mech.*, 10(1), pp. 33-40, 2018.
6. Dimitrov, D., Milosavljevi , N., Efficient Computation of Trees with Minimal Atom-Bond Connectivity Index Revisited, *MATCH Commun. Math. Comput. Chem.,* 79, pp. 431-450, 2018.
7. Glogi , E., Pavlovi , Lj., Note on the Unicyclic Graphs with the First Three Largest Wiener Indices, *Kragujevac Journal of Mathematics*, 42(4), pp. 533-537, 2018.
8. Das, K. C., Gutman, I., Milovanovi , I., Milovanovi , E., Furtula, B., Degreeóbased Energies of Graphs, *Linear Algebra and Its Applications,* 554, pp. 185ó204, 2018.
   DOI: 10.1016/j.laa.2018.05.027
9. Oliveira, E.R., Stevanovi , D., Trevisan, V., Spectral Radius Ordering of Starlike Trees, accepted for publication in *Linear and Multilinear Algebra*,
   DOI:10.1080/03081087.2018.1524435

Subproject 2: Chemical graph theory

1. Ma, Y., Cao, S., Shi, Y., Gutman, I., Dehmer, M., Furtula, B., From the Connectivity Index to Various Randi ótype Descriptors, *MATCH Communications in Mathematical and in Computer Chemistry*, 80, pp. 85ó106, 2018.
2. Furtula, B., Das, K. C., Gutman, I., Comparative Analysis of Symmetric Division Deg Index as Potentially Useful Molecular Descriptor, *International Journal of Quantum Chemistry*, 118, #e25659, 2018.
   DOI: 10.1002/qua.25659
3. Gutman, I., Furtula, B., Katani , V., Randi Index and Information, *AKCE International Journal of Graphs and Combinatorics*, 15, pp. 307ó312, 2018.
   DOI: 10.1016/j.akcej.2017.09.006
4. Gligorijevi , A., Markovi , S., Redflepovi , I., Furtula, B., Application of spectral graph theory on the enthalpy of formation of acyclic saturated ketones, Journal of the Serbian Chemical Society 83 pp. 1339-1349, 2018.
   DOI: 10.2298/JSC180906086G

Subproject 3: Mathematical programming

1. Cvetkovi , D., angalovi , M., Drafli , Z., Kova evi -Vuj i , V., Complexity Indices for the Traveling Salesman Problem Based on Short Edge Subgraphs, *Central European Journal of Operations Research*, 26(3), pp. 759-769, 2018.
2. Maksimovi Z., Kratica J., Savi A., Mati D., Solving the Multidimensional Maximum Bisection Problem by a Genetic Algorithm and Variable Neighborhood Search, *Journal of Multiple-Valued Logic & Soft Computing*, 31(4), pp. 323-358, 2018.
3. Kova , N., Davidovi , T., Stanimirovi , Z., Variable Neighborhood Search Methods for the Dynamic Minimum Cost Hybrid Berth Allocation Problem, *Information Technology and Control*, 47(3), pp. 471-488, 2018.
4. Cvetkovi , D., angalovi , M., Drafli , Z., Kova evi -Vuj i , V., The Traveling Salesman Problem: The Spectral Radius and the Length of an Optimal Tour, *Bull. Acad. Serbe Sci. Arts, Cl. Sci. Math. Natur., Sci. Math.*, to appear, 2018.

Subproject 4: Structural graph theory and algorithms

1. Cameron, K., Huang, S., da Silva, M.V.G., Vu–kovi , K., Structure and Algorithms for (cap, even hole)-free Graphs, *Discrete Mathematics*, 341(2), pp. 463-473, 2018.
2. Diot, E., Radovanovi , M., Trotignon, N., Vu–kovi , K., The (theta, wheel)-free Graphs, Part I: Only-prism and Only-pyramid Graphs, to appear in *Journal of Combinatorial Theory B*.
   DOI:10.1016/j.jctb.2017.12.004
3. Chudnovsky, M., Lo, I., Maffray, F., Trotignon, N., Vu–kovi , K., Coloring Square-free Berge Graphs, to appear in *Journal of Combinatorial Theory B*.
   DOI:10.1016/j.jctb.2018.07.010
4. Boncompagni, V., Radovanovi , M., Vu–kovi , K., The Structure of (theta, pyramid, 1-wheel, 3-wheel)-free Graphs, to appear in *Journal of Graph Theory*.

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5. Chudnovsky, M., Liu, C.-H., Schaudt, O., Spirkl, S., Trotignon, N., Vu–kovi , K., Triangle-free Graphs that do not Contain an Induced Subdivision of K_4 are 3-colorable, to appear in *Journal of Graph Theory*.
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6. Boncompagni, V., Penev, I., Vu–kovi , K., Clique-cutsets Beyond Chordal Graphs, to appear in *Journal of Graph Theory*.
DOI:10.1002/jgt.22428

Other journal papers

1. Stevanovi , S., Stevanovi , D., On Distance-based Topological Indices Used in Architectural Research, *MATCH Commun. Math. Comput. Chem.*, 79, pp. 659-683, 2018.

2. Stevanovi , S., Stevanovi , D., Optimisation of Curvilinear External Shading of Windows in Cellular Offices, *PLoS ONE,* 13(9), e0203575, 2018.

3. Stevanovi , S., Urban Planning Indicators in Sustainable Building Assessment Methods, *J. Eng. Res.,* 6, pp. 75-88, 2018.

4. Male–evi , B., Ra–ajski, M., Lutovac, T., Refined Estimates and Generalizations of Inequalities Related to the Arctangent Function and Shafer s Inequality, *Mathematical Problems in Engineering*, 2018, Article ID 4178629, 8 pages, 2018.

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5. Ra–ajski, M., Lutovac, T., Male–evi , B., Sharpening and Generalizations of Shafer-Fink and Wilker Type Inequalities: A New Approach, *Journal of Nonlinear Sciences and Applications*, 11(7), pp. 885 893, 2018.

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6. T. Lutovac, B. Male–evi , M. Ra–ajski: A New Method for Proving Some Inequalities Related to Several Special Functions, *Results in Mathematics*, (2018) 73: 100, 1-15 DOI:/10.1007/s00025-018-0862-1

7. M. Ra–ajski, T. Lutovac, B. Male–evi : About some exponential inequalities related to the sinc function, *Journal of Inequalities and Applications*, 2018: 150, 1-10 DOI:10.1186/s13660-018-1740-9

8. B. Male–evi , T. Lutovac, M. Ra–ajski, M. Cristinel: Extensions of the natural approach to refinements and generalizations of some trigonometric inequalities, *Advances in Difference Equations*, 2018:90 (2018), 1-15

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9. Arsi , B., oki -Petrovi , M., Spalevi , P., Milentijevi , I., Ran i , D., fiivanovi , M., SpecINT: A Framework for Data Integration Over Cheminformatics and Bioinformatics RDF Repositories, to appear in *Semantic Web - Interoperability, Usability, Applicability*, 2018.

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10. Cvetkovi , D., Drobni T., Todor evi V., Recognition of Music Melodies in Spectral Graph Theory, *Phlogiston*, 26, 165-180, 2018.

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Conference papers

1. Cvetkovi , D., angalovi , M., Drafli , Z., Kova evi -Vuj i , V., The traveling salesman problem: spectral moments and the length of an optimal tour, *Proc. XLV Symposium on Operational Research*, SYMOPIS 2018, Zlatibor, Sept. 16-18, 2018, pp. 118-122.

2. Maksimovi Z., Kratica J., Savi A., Bogdanovi M., Some static Roman domination numbers for flower snarks, *Proc. XIII Balkan Conference on Operational Research*, BALCOR 2018, Belgrade, May 25-28, 2018, pp. 9-16.

3. angalovi M., Kova evi -Vuj i V., Kratica J., k-metric antidimension of wheels and grid graphs, *Proc. XIII Balkan Conference on Operational Research*, BALCOR 2018, Belgrade, May 25-28, 2018, pp. 17-24.

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5. Anoki , A., Stanimirovi , Z., Staki , ., Davidovi , T., General Variable Neighborhood Search for Scheduling Heterogeneous Vehicles in Agriculture, *Proc. 6th International Conference on Variable Neighborhood Search*, Sithona, Halkidiki, Greece, Oct. 4-7, 2018.

6. Ilin, V., Matijevi , L., Davidovi , T., Pardalos, P. M., Asymmetric Capacitated Vehicle Routing Problem with Time Window, *Proc. XLV Symposium on Operational Research*, SYMOPIS 2018, Zlatibor, Sept. 16-18, 2018, pp. 174-179.

7. Davidovi , T., Jak–i Kruger, T., Convergence Analysis of Swarm Intelligence Meta-heuristic Methods, *Proc. The 7th International Conference on Optimization Problems and Their Applications*, OPTA 2018, Omsk, Russia, July 08-14, 2018, In: Eremeev A., Khachay M., Kochetov Y., Pardalos P. (eds.), Communications in Computer and Information Science book series (CCIS, volume 871), Springer, 2018, pp. 251-266.

8. Davidovi , T., Gli–ovi , N., Ra–kovi , M., Bee Colony Optimization for Clustering Incomplete Data, *Proc. The 7th International Conference on Optimization Problems and Their Applications*, OPTA 2018, Omsk, Russia, July 08-14, 2018, In: S. Belim et al. (eds.): Proceedings of the School-Seminar on Optimization Problems and their Applications (OPTA-SCL 2018), CEUR Workshop Proceedings, 2018, pp. 94-108.

9. Anoki , A., Stanimirovi , Z., Davidovi , T., Staki , ., Vehicle Scheduling Problem in Sugar Beet Transportation: A General Variable Neighborhood Search Approach, *Proc. XIII Balkan Conference on Operational Research*, BALCOR 2018, Belgrade, May 25-28, 2018, pp. 144-151.

10. Jovovi , I., irovi , N., Koledin, T., Application-Inspired Learning of Mathematics for Students of Electrical Engineering with the Aid of GeoGebra as an Information Technology Tool, *Proceedings of 8th International Conference on Information Society and Technology* ó ICIST 2018, Kopaonik, Serbia on Mar 11-14, 2018, Vol. 2, Article 54, pp. 260-264.