**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., Stevanović, D., A Combinatorial Matrix Theory, in (A.M. Encinas, M. Mitjana, eds.), *Advanced courses in Mathematics*, CRM Barcelona, Birkhauser, Basel, Springer, 2018.
2. Stanić, Z., Reconstruction Problems in Graph Theory (in Serbian), Mathematical Institute SASA, Belgrade, 2018.

**JOURNAL PAPERS**

**Subproject 1: Spectral graph theory**

1. Jovović, I., Koledin, T., Stanić, Z., Trees with Small Spectral Gap, *Ars Mathematica Contemporanea*, 14, pp. 97-107, 2018.
2. Stanić, Z., Perturbations in a Graph and its Index, *Discussiones Mathematicae Graph Theory*, 38, pp. 841-852, 2018.
3. Stevanović, D., Comments on “Some New Results on Energy of Graphs”, *MATCH Commun. Math. Comput. Chem*., 80(2), pp. 445-447, 2018.
4. Zogić, E., Borovićanin, B., Some New Bounds on Randić Energy, *Kragujevac J. Math*., 43(3), pp. 393-398, 2019.
5. Zogić, E., Borovićanin, B., Milovanović, I., Milovanović, E., On Bounds of Eigenvalues of Randić 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., Milosavljević, N., Efficient Computation of Trees with Minimal Atom-Bond Connectivity Index Revisited, *MATCH Commun. Math. Comput. Chem.,* 79, pp. 431-450,** 2018.
7. **Glogić, E., Pavlović, 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., Milovanović, I., Milovanović, E., Furtula, B., Degree–based Energies of Graphs, *Linear Algebra and Its Applications,* 554,pp. 185–204, 2018.

**DOI:** 10.1016/j.laa.2018.05.027

1. Oliveira, E.R., Stevanović, 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 Randić–type Descriptors, *MATCH Communications in Mathematical and in Computer Chemistry,* 80, pp. 85–106, 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

1. Gutman, I., Furtula, B., Katanić, V., Randić Index and Information, *AKCE International Journal of Graphs and Combinatorics,* 15, pp. 307–312, 2018.

**DOI:** 10.1016/j.akcej.2017.09.006

1. Gligorijević, A., Marković, S., Redžepović, 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. Cvetković, D., Čangalović, M., Dražić, Z., Kovačević-Vujčić, 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. Maksimović Z., Kratica J., Savić A., Matić 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. Kovač, N., Davidović, T., Stanimirović, 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. Cvetković, D., Čangalović, M., Dražić, Z., Kovačević-Vujčić, 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., Vušković, K., Structure and Algorithms for (cap, even hole)-free Graphs, *Discrete Mathematics,* 341(2), pp. 463-473, 2018.
2. Diot, E., Radovanović, M., Trotignon, N., Vušković, K., The (theta, wheel)-free Graphs, Part I: Only-prism and Only-pyramid Graphs, to appear in *Journal of Combinatorial Theory B*.

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1. Chudnovsky, M., Lo, I., Maffray, F., Trotignon, N., Vušković, K., Coloring Square-free Berge Graphs, to appear in *Journal of Combinatorial Theory B*.

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1. Boncompagni, V., Radovanović, M., Vušković, K., The Structure of (theta, pyramid, 1-wheel, 3-wheel)-free Graphs, to appear in *Journal of Graph Theory*.

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1. Chudnovsky, M., Liu, C.-H., Schaudt, O., Spirkl, S., Trotignon, N., Vušković, K., Triangle-free Graphs that do not Contain an Induced Subdivision of K4 are 3-colorable, to appear in *Journal of Graph Theory*.

DOI:10.1002/jgt.22441

1. Boncompagni, V., Penev, I., Vušković, K., Clique-cutsets Beyond Chordal Graphs, to appear in *Journal of Graph Theory*.

DOI:10.1002/jgt.22428

**Other journal papers**

1. Stevanović, S., Stevanović, D., On Distance-based Topological Indices Used in Architectural Research, *MATCH Commun. Math. Comput. Chem.*, 79, pp. 659-683, 2018.
2. Stevanović, S., Stevanović, D., Optimisation of Curvilinear External Shading of Windows in Cellular Offices, *PLoS ONE,* 13(9), e0203575, 2018.
3. Stevanović, S., Urban Planning Indicators in Sustainable Building Assessment Methods, *J. Eng. Res.,* 6, pp. 75-88, 2018.
4. Malešević, B., Rašajski, 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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1. Rašajski, M., Lutovac, T., Malešević, 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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1. T. Lutovac, B. Malešević, M. Rašajski: 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
2. M. Rašajski, T. Lutovac, B. Malešević: 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
3. B. Malešević, T. Lutovac, M. Rašajski, 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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1. Arsić, B., Đokić-Petrović, M., Spalević, P., Milentijević, I., Rančić, D., Živanović, 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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1. Cvetković, D., Drobni T., Todorčević V., Recognition of Music Melodies in Spectral Graph Theory, *Phlogiston*, 26, 165-180, 2018.
2. Arsić, Б., Bojić, Lj., Мilentijević, I., Spalević, P., Rančić, D., SYMBOLS: software for social network analysis, Facta Universitatis, Series: Automatic Control and Robotics, 17(3), pp. 205-222, 2018. DOI: 10.22190/FUACR1803205A

**Conference papers**

1. Cvetković, D., Čangalović, M., Dražić, Z., Kovačević-Vujčić, 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. Maksimović Z., Kratica J., Savić A., Bogdanović 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. Čangalović M., Kovačević-Vujčić 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. Anokić, A., Stanimirović, Z., Stakić, Đ., Davidović, 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., Matijević, L., Davidović, 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. Davidović, T., Jakšić 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. Davidović, T., Glišović, N., Rašković, 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. Anokić, A., Stanimirović, Z., Davidović, T., Stakić, Đ., 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. Jovović, I., Ćirović, 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* – ICIST 2018, Kopaonik, Serbia on Mar 11-14, 2018, Vol. 2, Article 54, pp. 260-264.