

GAIANE PANINA, CV AND SELECTED PUBLICATIONS

Name: Gaiane Panina; **Date of birth:** 08.03.1963; **Citizenship:** Russia.

Education: 1984-1988 Post Graduate Student at Steklov Institute, St.Petersburg;
1979-1984 Student at Math. Mech. Dep. of the Leningrad State University

Positions: **(1)** Since November 2016 St.Petersburg Department of V.A. Steklov Institute of Mathematics RAS; Leading researcher. **(2)** 1989–2016 St.Petersburg Institute for Informatics and Automation RAS; Leading researcher. **(3)** Mathematics and Mechanics Department of St.Petersburg State University; Professor.

Fields of research: Discrete geometry, topological robotics, convexity, geometry and combinatorics of polytopes.

Courses taught (recent ones): Convex polytopes and algebraic geometry, combinatorics of polytopes, moduli spaces of algebraic curves, integer points in lattice polytopes, polytope algebra, configuration spaces, Morse theory, Teichmüller spaces.

PhD students: Marina Knyazeva (PhD 2008), Alena Zhukova (PhD 2012)

Recent invited lectures:

2012 Algebraic and Differential Geometry of Andrei Tyurin, Moscow
2013 Computer Algebra, St. Petersburg
2013 Geometry, Topology, and Applications, Yaroslavl
2014 Geometry, Topology and Integrability, Moscow
2014 Configuration spaces of linkages, AIM, Palo Alto
2015 Torus Actions in Geometry, Topology, and Applications, Moscow
2016 Geometric rigidity: theory and applications, Edinburgh
2016 Topology in motion, ICERM, Providence
2017 Days of Geometry, Novosibirsk
2017 Applied and computational topology, Bonn
2018 Rigidity and Flexibility of Geometric Structures, Vienna
2018 Algebraic Topology, Combinatorics, and Mathematical Physics, Moscow

Selected publications:

- [1] G. Panina New counterexamples to A.D. Alexandrov's hypothesis. *Advances in Geometry*, No. 5, 301-317 (2005).
- [2] G. Panina, I. Streinu, Flattening single-vertex origami: The non-expansive case. *Comput. Geom.* 43, No. 8, 678-687 (2010).
- [3] G. Panina, A. Zhukova, Morse index of a cyclic polygon. *Cent. Eur. J. Math.*, 9(2), 364-377(2011).
- [4] G. Panina, Around A.D. Alexandrov's uniqueness theorem for convex polytopes. *Adv. Geom.* Vol.14, No. 4, 621-637(2012).
- [5] G. Panina, G. Khimshiashvili, On the Area of a Polygonal Linkage *Dokl. Akad. Nauk, Mathematics*, , Vol. 85, No. 1, 120-121(2012).

- [6] G. Khimshiashvili, G. Panina, D. Siersma, Coulomb control of polygonal linkages, *J. Dyn. Contr. Syst.* 14, No.4, 491-501 (2014).
- [7] Y. Martinez-Maure, G. Panina, Singularities of virtual polytopes, *J. of Geometry*, Vol. 105, 2, 343-357 (2014).
- [8] G. Panina, I. Streinu, Virtual polytopes, *Uspekhi Mat. Nauk*, 2015, Volume 70, Issue 6(426), pp. 139202.
- [9] G. Panina, Cyclopermutohedron, *Trudy Mian*, 288, pp. 149162 (2015).
- [10] G. Panina, A. Zhukova, Discrete Morse theory for the moduli spaces of polygonal linkages, or solitaire on a circle, *Mat. Sb.*, 2017, Volume 208, 9, pp. 100–115.
- [11] G. Panina, Moduli space of planar polygonal linkage: a combinatorial description, *Arnold Math. J.*, vol. 3, No.3, 2017, 351–364.
- [12] G. Panina, J. Gordon, Diagonal complexes, *Izv. RAN*, 2018, 82, 5, pp. 3-22.
- [13] Joseph Gordon, Gaiane Panina, Yana Teplitskaya. Polygons with prescribed edge slopes: configuration space and extremal points of perimeter, *Beitrage zur Algebra und Geometrie*, 2018.
- [14] Gaiane Panina, Dirk Siersma. Motion planning and control of a planar polygonal linkage, *Journal of Symbolic Computations*, 2018.
- [15] Dusko Jojic, Ilia Nekrasov, Gaiane Panina, Rade T. Zivaljevic, Alexander r-tuples and Bier complexes, *Publications de l'Institut Mathematique (Beograd)*, 2018.