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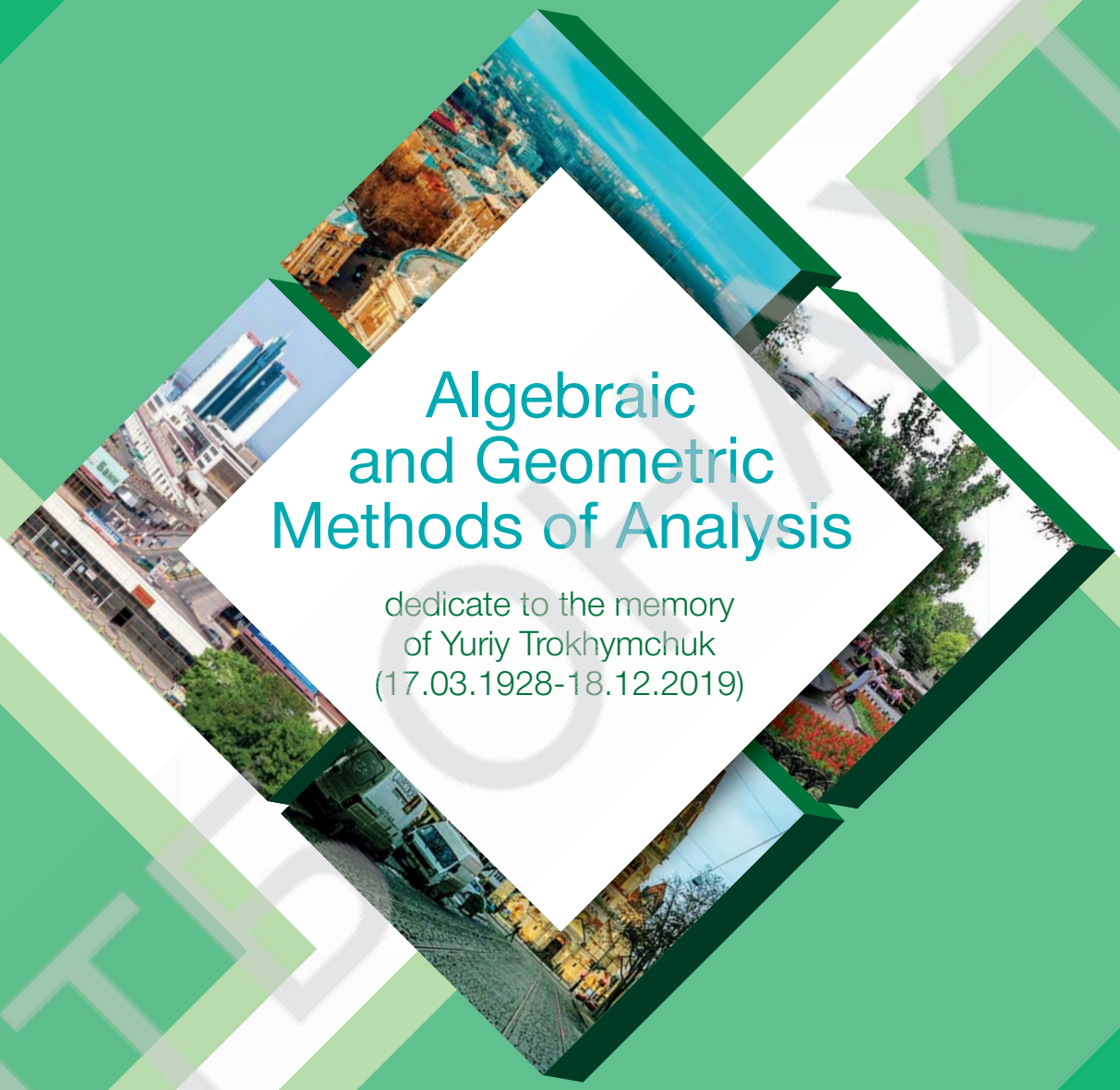

Algebraic and Geometric Methods of Analysis

dedicate to the memory
of Yuriy Trokhymchuk
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List of topics

- Topological methods in analysis
- Geometric problems of complex and mathematical analysis
- Algebraic methods in geometry
- Differential geometry in the whole
- Geometry and topology of differentiable manifolds
- General and algebraic topology
- Geometric and topological methods in natural sciences

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The invariants of planar 3-webs with respect to group of symplectic diffeomorphisms, for the case of the conformal group

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The classical web geometry ([1],[2],[4]) studies invariants of foliation families with respect to pseudogroup of diffeomorphisms. Thus for the case of planar 3-webs the basic semi invariant is the Blaschke curvature ([3]). It is also curvature of the Chern connection ([4]) that are naturally associated with a planar 3-web. Remark that we have in addition to the diffeomorphism group two infinite dimensional groups: symplectic and conformal groups.

We investigate invariants of planar 3-webs with respect to group of symplectic diffeomorphisms, for the case of the conformal group see ([5]). We found the basic symplectic invariants of planar 3-webs that allow us to solve the symplectic equivalence problem for planar 3-webs in general position. The Lie-Tresse theorem ([2]) gives the complete description of the field of rational symplectic differential invariants of planar 3-webs. We also give normal forms for homogeneous 3-webs, i.e. 3-webs having constant basic invariants.

References

[1] Akivis M. A., "Differential geometry of webs", Itogi Nauki i Tekhniki. Ser. Probl. Geom., 15, VINITI, Moscow, 1983, 187–213; J. Soviet Math., 29:5
[2] Blaschke W., Bol G.. Geometrie der Gewebe. Vol. 335. No. 8. Berlin, 1938.
[3] Blaschke W. Einführung in die Geometrie der Waben, Birkhäuser 1955
[4] Chern S.-S., Web geometry. Bulletin of the American Mathematical Society 6.1 (1982) : 1-8.
[5] E. Fierro, Tissus et holonomie. C. R. Acad. Sci. Paris S er. I Math. 330 (2000), no. 12, 1065-1068.
[6] Kruglikov B., Lychagin V. Global Lie-Tresse theorem. Selecta Mathematica 22 (3),2016