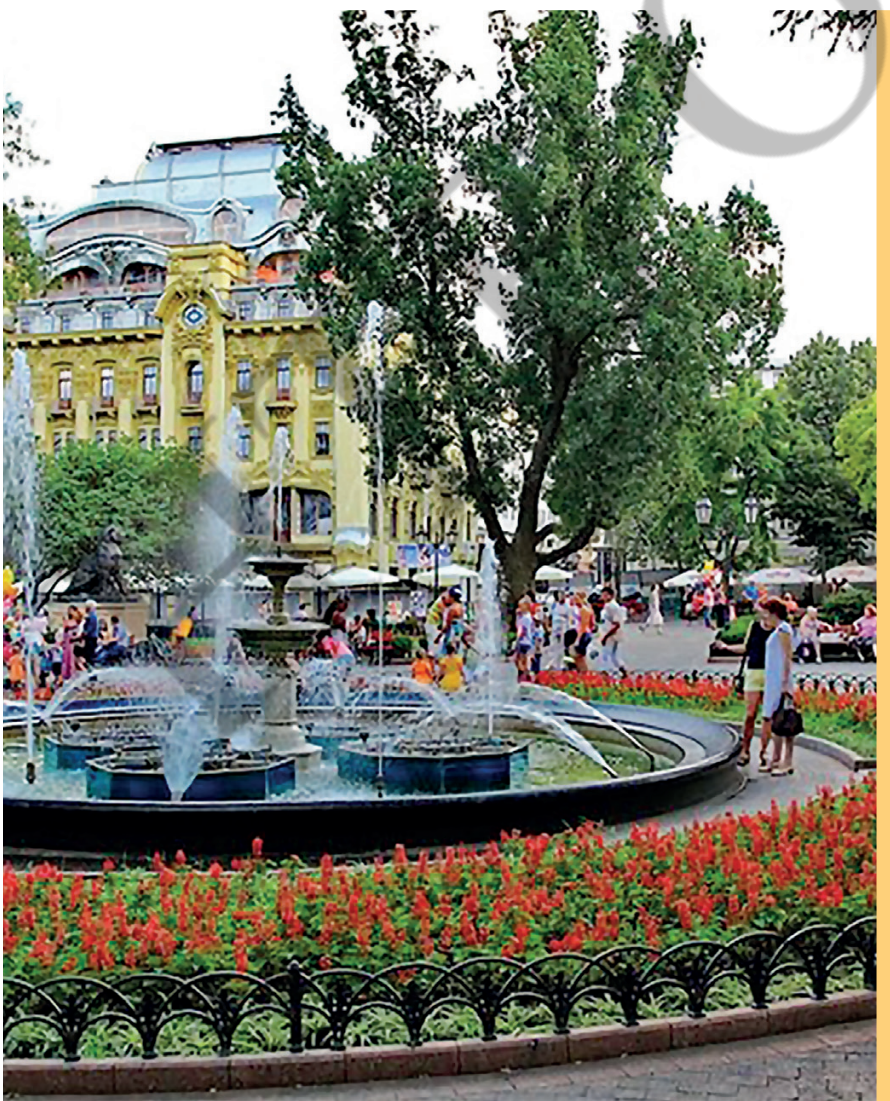
International
Scientific Conference

Algebraic and Geometric Methods of Analysis



Devoted to 160 anniversary of
Dvytro Grave
(25.08.1863 - 19.12.1939)
Academician of the Ukrainian Academy of Sciences, the first director of the Institute of Mathematics of NAS of Ukraine

May 29 – June 1, 2023
Odesa, Ukraine

List of topics

- Algebraic methods in geometry
- Differential geometry in the large
- Geometry and topology of differentiable manifolds
- General and algebraic topology
- Dynamical systems and their applications
- Geometric and topological methods in natural sciences
- Geometric problems in mathematical analysis

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[6] Shugailo O.O. On affine immersions with flat connections. *Journal of Math. Physics, Analysis, Geometry*, 8(1) : 90–105, 2012.
[7] Shugailo O. O. Affine Submanifolds of Rank Two. *Journal of Math. Physics, Analysis, Geometry*, 9(2) : 227–238, 2013.

Some vanishing theorems of sufficient character about holomorphically projective mappings of Kahlerian spaces on the whole

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The generalized Bochner technique (see, for example, [1]) allows to broad to the noncompact but compete Kahlerian spaces some well-known theorems of holomorphically projective unique definability that have been proved previously only to the compact ones (see, for example, [2]). In particular, the next statements are true.

Theorem 1. *Complete connected Kahlerian C^r-spaces K^n ($n > 2$, $r > 3$) with positive definite Ricci form don't admit non-trivial (different from affine) holomorphically projective mappings on the whole.*

Corollary 2. *Complete connected Kahlerian C^r-spaces K^n ($n > 2$, $r > 3$) that have sign-definite metric form sign of which coincides with the sign of scalar curvature don't admit non-trivial (different from affine) holomorphically projective mappings on the whole.*

Corollary 3. *Complete connected Kahlerian C^r-spaces K^n ($n > 2$, $r > 3$) that have positively definite metric form and non-positively definite on the set of symmetric tensors b^{ij} form*

$$R_{\alpha\gamma\sigma\beta}b^{\alpha\beta}b^{\gamma\sigma}$$

don't admit non-trivial (different from affine) holomorphically projective mappings on the whole.

Examples of Kahlerian spaces of considered types are known. In particular, complete connected Kahlerian C^r-spaces K^n ($n > 2$, $r > 3$) of constant non-positive holomorphic curvature with positively definite metric form satisfies conditions of the both corollaries.

References

[1] Pigola S., Rigoli M., Setti A.G. *Vanishing in finitness results in geometric analysis.* in *A Generalization of the Bochner Technique.*, Berlin: Birkhauser Varlag AG, 2008
[2] Sinyukova, H.N. On some classes of holomorphically-projectively uniquely defined Kahlerian spaces on the whole, *Proc. Intern. Geom. Center*, 3(4) : 15–24, 2010.