

# INTERNATIONAL BIWEEKLY ONLINE SEMINAR ON ANALYSIS, DIFFERENTIAL EQUATIONS AND MATHEMATICAL PHYSICS

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Coordinators: Prof. Alexey Karapetyants, Prof. Vladislav Kravchenko

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**26 January 2023, 6 pm (UTC+3)**

**Bianalytic polynomial approximations, Nevanlinna domains and univalent functions in model spaces**

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In the talk we plan to consider the problem on uniform approximation by bianalytic polynomials on compact sets in the complex plane. The obtained results in this problem are essentially based on the new special analytic property of bounded simply connected domain in the plane which is known nowadays as a concept of a Nevanlinna domain. We will discuss this concept, and consider its relations with the theory of model spaces (that is the subspaces of the Hardy space  $H^2$ , which are invariant with respect to the backward shift operator). More precisely we discuss the problem on whether such spaces contain bounded univalent functions and what are the possible boundary properties of bounded univalent functions belonging to model spaces.

\*Seminar website: <https://msrn.sfedu.ru/sl>. The seminar uses Microsoft Teams online platform. Please send questions to [ademp.seminar@gmail.com](mailto:ademp.seminar@gmail.com) (Tatiana Andreeva, scientific secretary).

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The seminar is organized by the coordinators Alexey Karapetyants and Vladislav Kravchenko within the activities of the Regional Mathematical Center of the Southern Federal University in collaboration with Institute of Mathematics, Mechanics and Computer Sciences of the Southern Federal University and the OTHA research group in Operator Theory and Harmonic Analysis.



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