

ABSTRACTS

Evgeny Abakoumov

On Chui Conjecture

We consider a particular form of Chui conjecture on the unit disc. We define a special scale of weighted Bergman norms on \mathbb{D} and show that there is a critical point on this scale that governs the approximation properties of the simplest fractions. We also show that in the subcritical case the minimum is achieved by the uniform distribution of the poles.

Nicola Arcozzi

Capacitary estimates and the Hardy inequality on the tree

We consider the weighted Hardy inequality on the dyadic tree. We explain how it is related to the characterization of Carleson measures for some Hilbert spaces of analytic functions. We also provide several different proofs of this inequality, including the Bellman function argument and Potential-theoretic estimates.

Yurii Belov

Ordered structure for Cauchy-de Branges spaces

We obtain new versions of de Branges Ordering Theorem for nearly invariant subspaces in a class of Hilbert spaces of entire functions. In particular, we extend some results of M.G. Krein to the class of entire functions which can be represented as ratios of discrete Cauchy transforms in the plane. This is joint work with E. Abakoumov and A. Baranov

This talk is based on the research supported by the Russian Science Foundation (grant no. 17-11-01064)

Nikolaos Chalmoukis

Interpolation in the Dirichlet space on the unit disc

We will discuss a characterization of onto interpolating sequences with finite associated measure for the Dirichlet space in terms of capacity of some condensers. The same condition in fact characterizes all onto interpolating sequences for $W^{1,2}(\mathbb{D})$ even if the associated measure is infinite.

Konstantin Fedorovskiy

On Lip^m and C^m continuity of harmonic reflection operator

We consider the problem on Lip^m and C^m continuity of the operator of harmonic reflection of functions over boundaries of simple Carathéodory domains on the plane and in the space. This operator acts as follows: It maps a function which is harmonic in a given (simple Carathéodory) domain and continuous in its closure to the solution of Dirichlet problem in the complementary domain with boundary data equal to the restriction of a given function to the boundary of the domain under consideration. The talk is based on joint works with P. Paramonov and E. Borovik.

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Alessandro Monguzzi

Spaces of Entire Functions in \mathbb{C}^{n+1}

A renowned space of entire functions of one complex variable is the Paley–Wiener space PW_A , that is, the space of entire functions of exponential type A whose restriction to the real line is square integrable. In this talk I will present a generalization of PW_A in several complex variables. In particular, I will consider entire functions which satisfy a suitable exponential growth condition and whose restriction to the boundary of the Siegel half-space satisfy some integrability conditions. For this space I will provide a Paley–Wiener type characterization and a sampling result.

This is a joint work with Marco Peloso and Maura Salvatori.

Pavel Mozolyako

Hardy inequality on the tree and bitree

We discuss two-weight inequalities of Hardy type on the dyadic tree (system of dyadic intervals), and on the bitree (system of dyadic rectangles). We establish the connection to several classic problems in Analysis, and discuss the differences between one- and two-dimensional settings.

Based on a joint work with N. Arcozzi and A. Volberg.

Alexander Ulanovskii

On irregular sampling and interpolation in Bernstein spaces

Sharp estimates of the sampling and interpolation constants in spaces of polynomials are obtained. These estimates are used to deduce asymptotically sharp estimates of the sampling and interpolation constants for Bernstein spaces as the density of the sampling set approaches the critical value. Based on the joint work with Alexander Olevskii.