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

Coordinators: Prof. Alexey Karapetyants, Prof. Vladislav Kravchenko

6 April 2023, 6 pm (UTC+3)

Partially holomorphic functions in several variables

Mark Lawrence, Nazarbayev University, Kazakhstan

mlawrence@nu.edu.kz

In this talk we introduce the notion of "partially holomorphic functions" in several variables. Given a domain in $\mathbb{C}^n$, we all a function partially holomorphic if it is holomorphic on the slices in one affine direction, while in one or more other affine directions it satisfies moment conditions for being holomorphic. On the ball an example is any polynomial in z, w, $|w|$. Any such function is holomorphic in z, while on slices where z is constant, it extends holomorphically from any circle centered at 0. Partially holomorphic functions on the ball are the main object of study in this talk. They arise naturally when considering functions on the sphere which have holomorphic extensions in multiple affine directions. Other domains are also interesting. The goal of this research was to show that partially holomorphic functions on the ball must be real analytic, given enough directions; we have partial progress on this question.

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

Regional Mathematical Center
https://rmc.sfedu.ru/

Institute of Mathematics, Mechanics and Computer Sciences
http://www.mmcs.sfedu.ru/

OTHA research network in Operator Theory and Harmonic Analysis
http://msrn.sfedu.ru/