

Mathematical Colloquia

Monday, 01. Oktober 2018

17:15 h, Lecture Room 119

Prof. Dr. Evgeni Dubtsov, Steklov Institute St. Petersburg

Holomorphic maps, tropical power series, and log-convex weights

Abstract:

Let Ω denote \mathbb{C}^d or the unit ball B_d of \mathbb{C}^d . Given a radial weight $w: \Omega \rightarrow (0, +\infty)$, we consider the following problem: for certain $N=N(d)$, find a holomorphic map $f: \Omega \rightarrow \mathbb{C}^N$ such that $|f|$ is equivalent to w , up to a multiplicative constant.

We give several characterizations of those w for which the problem is solvable. In particular, we give a constructive solution in terms of tropical power series.

Also, we show that the problem in the ball B_d is solvable for any log-convex radial weight w ; however, this is not the case for \mathbb{C}^d .

(The talk is based on a joint work with E. Abakumov, Université Paris-Est.)