Plurisubharmonic functions and Alexandrov type estimates

Żywomir Dinew

In its classical version for a function $u \in C^2(\Omega) \cap C(\bar{\Omega})$ living in a bounded domain Ω the Alexandrov estimate reads:

$$\sup_{\Omega} u \leq \sup_{\partial\Omega} u + \frac{diam(\Omega)}{\omega_n^{1/n}} \left(\int_{\{-u=\Gamma_{-u}\}} |\det D^2 u| \right)^{\frac{1}{n}}, \tag{1}$$

where ω_n stands for the volume of the unit ball in $\mathbb{R}^n$ and $\{-u = \Gamma_{-u}\}$ is the so-called contact set. This estimate has many generalizations in various directions - estimates for less regular functions, on unbounded sets, or for various differential operators of second order. We will study similar estimates in the particular case of bounded plurisubharmonic functions.

This is a joint work with Sławomir Dinew.