Stability of weak solutions of the complex Monge-Ampère equation on compact Hermitian manifolds

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Abstract

This is joint work with Nguyen Ngoc Cuong. Let (X, ω) be a compact Hermitian manifold of complex dimension n. We study the weak solutions to the complex Monge-Ampère equation

$$(\omega + dd^c\varphi)^n = f\omega^n, \quad \omega + dd^c\varphi \geq 0,$$

where $0 \leq f \in L^p(X, \omega^n)$, $p > 1$, and $dd^c = \frac{i}{\pi}\partial\bar{\partial}$, with the inequality understood in the sense of currents. For strictly positive right hand side a stability statement is given. It is used to show Hölder continuity of solutions and an extension of Székelyhidi - Tosatti theorem from Kähler to Hermitian manifolds.