COMPLEX ANALYSIS SEMINAR

LIPSCHITZ PROPERTIES OF HARMONIC AND HOLOMORPHIC FUNCTIONS

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ABSTRACT: We present two results, one concerning Lipschitz harmonic functions and the other concerning Lipschitz holomorphic functions. We show that a harmonic function, in a smoothly bounded domain Ω in \mathbb{R}^n , that is Lipschitz- α ($0 < \alpha < 1$) along a family of curves transversal to $b\Omega$ is Lipschitz- α in Ω . We also show that a Lipschitz holomorphic function on a smoothly bounded domain Ω in \mathbb{C}^n (n > 1) has a Lipschitz gain in certain directions. This gain, or the lack thereof, in a fixed direction is determined by the relative size of complex discs (relative to the distance of its center to the boundary of the domain) that can be fit inside the domain in this direction.

Date: Thursday, September 15, 2011 Time: 4pm-5pm Place: UH 4500

Webpage: http://math.utoledo.edu/~sonmez/complexseminar.html