SEMINARIO DE ANÁLISIS Y APLICACIONES

Viernes, 22 de abril de 2016

11:30 h., Módulo 17 - Aula 520 (Depto. Matemáticas UAM)

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Rectifiability, interior approximation and Absolute continuity of Harmonic Measure

Resumen:

In this talk, we study the rectifiability of a closed set $E \subset \mathbb{R}^{n+1}$ having locally finite $n-$dimensional Hausdroff measure H^n and satisfying a condition weaker than the lower Ahlfors-David regularity. We show that almost all of E can be covered by a countable union of boundaries of bounded Lipschitz domains contained in the complement of E. By considering $\Omega = \mathbb{R}^{n+1} \setminus E$ and additionally assuming that Ω is connected domain and satisfies an infinitesimal interior thickness condition then we prove that $H^n|_{\partial\Omega}$ is absolutely continuous with respect to harmonic measure for Ω. By means of a recent result, we decompose the boundary of any open connected set satisfying the previous conditions in two disjoint pieces: one that is n-rectifiable where Hausdorff measure is absolutely continuous with respect to harmonic measure and another purely n-unrectifiable piece having vanishing harmonic measure.

This is a joint work with S. Bortz, S. Hofmann, and J. M. Martell.