

Calderón-Zygmund Analysis Seminar

Monday, February 15th, 3:45 pm

The Riemannian Quantitative Isoperimetric Inequality

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Abstract. The (Euclidean) isoperimetric inequality says that any set has a larger perimeter than a ball with the same area. The quantitative isoperimetric inequality says that the difference in perimeters is bounded from below by the square of the distance from our set E to the “closest” ball of the same area.

In this talk, we will discuss an extension of this result to closed Riemannian manifolds with analytic metrics. In particular, we show that a similar inequality holds but with the distance raised to a power that depends on the geometry. We also have examples which show that a greater power than two is sometimes necessary and that the analyticity condition is necessary.

This is joint work with O. Chodosh (Stanford) and L. Spolaor (UCSD).