

Thursday, October 17th, 12:00-13:00

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POINCARÉ INEQUALITIES AND UNIFORM RECTIFIABILITY

In their seminal Acta paper, Heinonen and Koskela developed a theory of metric spaces with controlled geometry," which meant two things: first, they were Ahlfors regular (that is, the volume of a ball scaled like r^d for some dimension d).

Second, they satisfied a Poincaré inequality, meaning that if a function on the space could be prescribed an upper gradient" for which the difference in values between the function was at most the integral of this gradient along any curve between those points (like the Fundamental Theorem of Calculus).

A result of Cheeger says that any such space that is a subset of Euclidean space must be rectifiable.

In this talk, I will discuss how we can show the stronger property that such a set is uniformly rectifiable.