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David, Guy; **Jerison, D.**

Lipschitz approximation to hypersurfaces, harmonic measure, and singular integrals. (English) Zbl 0758.42008

Indiana Univ. Math. J. 39, No. 3, 831-845 (1990).

The authors study hypersurfaces satisfying a scale-invariant condition. This condition is a generalization of the chord-arc condition on planar domains. Theorem 1 shows that, at all scales, a large fraction of such a surface coincides with a Lipschitz graph. As a consequence of this result, it is shown that a singular integral operator on a surface is bounded. It is also pointed out that an NTA domain satisfies an analogous property. As a consequence of this fact, it is deduced that harmonic measure and surface measure are mutually absolutely continuous.

Reviewer: T.Murai (Nagoya)

MSC:

42B20 Singular and oscillatory integrals (Calderón-Zygmund, etc.)

Cited in **4** Reviews
Cited in **46** Documents

Keywords:

Lipschitz approximation; hypersurfaces satisfying a scale-invariant condition; singular integral; harmonic measure; surface measure

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