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Uniform rectifiability, harmonic and p-harmonic measure: The weak-A_∞ property of harmonic and p-harmonic measures implies uniform rectifiability. Preliminary report.

Let $E \subset \mathbb{R}^{n+1}$, $n \geq 1$, be an Ahlfors-David regular set of dimension n. We show that the weak-A_∞ property of harmonic measure, for the open set $\Omega := \mathbb{R}^{n+1} \setminus E$, implies uniform rectifiability of E. More generally, we establish a similar result for the Riesz measure, p-harmonic measure, associated to the p-Laplace operator, $1 < p < \infty$. (Received September 06, 2015)