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CRM, Aula Petita.

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## Variation for Riesz transforms and uniform rectifiability

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### ABSTRACT:

I will present the following result, which is a joint work with Xavier Tolsa: "Let  $M$  be an  $n$ -dimensional AD regular measure. Then,  $M$  is uniformly  $n$ -rectifiable if and only if the variation for the Riesz transforms is a bounded operator in  $L^2(M)$ ". This result is related to an important open problem, posed by David and Semmes, about the equivalence between uniform rectifiability and  $L^2$  boundedness of the Riesz transforms. I will give the basic definitions, the motivation, and some ideas of the proof.