



# UNIVERSITÀ DI PARMA

DIPARTIMENTO DI SCIENZE MATEMATICHE, FISICHE E INFORMATICHE

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## Seminario di Analisi



Data: **Lunedì 18 giugno, ore 14:00**

Luogo: Sala Riunioni, Plesso di Matematica

Relatore: Prof. **Antonio De Rosa**  
Courant Institute of Mathematical Sciences,  
New York University

Titolo: **Anisotropic counterpart of Allard's rectifiability theorem and applications**

*Abstract: We present our recent extension of Allard's celebrated rectifiability theorem to the setting of varifolds with locally bounded first variation with respect to an anisotropic integrand. In particular, we identify a necessary and sufficient condition on the integrand to obtain the rectifiability of every  $d$ -dimensional varifold with locally bounded first variation and positive  $d$ -dimensional density.*

*We can apply this result to the minimization of anisotropic energies among families of  $d$ -rectifiable closed subsets of  $\mathbb{R}^n$ . Corollaries of this compactness result are the solutions to three formulations of the Plateau problem: one introduced by Reifenberg, one proposed by Harrison and Pugh and another one studied by Guy David.*

*Moreover, we apply the rectifiability theorem to prove an anisotropic counterpart of Allard's compactness result for integral varifolds.*

*To conclude, we give some ideas of an ongoing project, which relies on the presented rectifiability theorem.*

*The main result is a joint work with G. De Philippis and F. Ghiraldin.*