## Librería Bonilla y Asociados





## Título: On Necessary And Sufficient Conditions For L P -Estimates Of Riesz Transforms A

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Editorial:	<b>Año:</b> 2007
Tema:	Edición: 1ª
Sinopsis	<b>ISBN:</b> 9780821839416

This memoir focuses on L p estimates for objects associated to elliptic operators in divergence form: its semigroup, the gradient of the semigroup, functional calculus, square functions and Riesz transforms. The author introduces four critical numbers associated to the semigroup and its gradient that completely rule the ranges of exponents for the L p estimates. It appears that the case p<2 already treated earlier is radically different from the case p>2 which is new. The author thus recovers in a unified and coherent way many L p estimates and gives further applications. The key tools from harmonic analysis are two criteria for L p boundedness, one for p<2 and the other for p>2 but in ranges different from the usual intervals (1,2) and (2,8).

Table of Contents

Beyond Calderón-Zygmund operators Basic L 2 theory for elliptic operators L p theory for the semigroup L p theory for square roots Riesz transforms and functional calculi Square function estimates Miscellani Appendix A. Calderón-Zygmund decomposition for Sobolev functions Appendix. Bibliography