

PRE-LECTURA DE TESIS DOCTORAL

Jueves 13 de Abril 2023,

11:30–12:30, Aula 520, Módulo 17

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Noncommutative analysis techniques in the
geometry of L_p spaces
and Calderón-Zygmund theory

Resumen:

In this thesis, we study several applications of noncommutative harmonic analysis. Firstly, we consider the generalization of an inequality on the Hamming cube given by Naor and Schechtman, which has deep consequences in the metric geometry of L_p spaces. In particular, we extend this result to the context of group von Neumann algebras and obtain some nonembeddability results related to noncommutative L_p spaces. On the other hand, we tackle the boundedness of Calderón-Zygmund operators on the Hardy space of matrix-valued functions, yielding a new result for operator-valued kernels.

This thesis has been written under the join supervision of Javier Parcet (ICMAT) and Jose Conde-Alonso (UAM).

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