SEMINARIO DE ANÁLISIS Y APLICACIONES

Viernes, 15 de marzo de 2019

11:30 h., Módulo 17 - Aula 520 (Depto. Matemáticas UAM)

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Noncommutative versions of the strong maximal function

Resumen:
In the context of von Neumann algebras bilateral almost uniform convergence plays the role of almost everywhere convergence in measure spaces. It is known, after the work for Junge and Xu, that there is a maximal ergodic theorem in the L_p-spaces of von Neumann algebras that holds true and implies bilateral almost everywhere convergence. One substantial difference between that theorem and the classical one being that the optimal constants grow like $(p-1)^{-2}$ —as opposed to $(p-1)^{-1}$—. This has profound implications, for instance the optimal extrapolation space for maximal ergodic inequalities is $L \log^2 L$ —as opposed to $L \log L$—.

Here, we are going to present new results that give almost uniform convergence for maximals in several indices for operators in $L \log^2 L$. Our results generalize a technique of Jessen, Marcinkiewicz and Zygmund. After that, we will discuss aplication to the free group algebra.

This is joint work with Jose Conde-Alonso and Javier Parcet.

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