

1047-46-423

**Tao Mei\*** ([mei@math.uiuc.edu](mailto:mei@math.uiuc.edu)), 1409 W Green Street, Univ. of Illinois, Dept. of Math., Urbana, IL 61801, and **Javier Parcet** ([javier.parcet@uam.es](mailto:javier.parcet@uam.es)), Instituto de Ciencias Matemáticas, Consejo Superior de Investigaciones Científicas, Serrano 121, 28006 Madrid, Spain. *Littlewood-Paley inequalities for operator-valued functions.*

The classical Littlewood-Paley theory states that a function  $f$  and the square function corresponding to a "nice" decomposition of  $f$  have equivalent  $L_p$  norms. We study Littlewood-Paley type inequalities for functions with values in noncommutative  $L_p$  spaces for  $p = 1, \infty$ . By interpolation, the result extends to all  $1 < p < \infty$ . In the case of Schatten- $p$  class-valued functions, we improved a previous result by Bourgain/McConnell by giving optimal constants. This is a recent joint work with Javier Parcet. (Received February 03, 2009)