1047-46-423 **Tao Mei*** (mei@math.uiuc.edu), 1409 W Green Street, Univ. of Illinois, Dept. of Math., Urbana, IL 61801, and **Javier Parcet** (javier.parcet@uam.es), Instituto de Ciencias Matem aticas, Consejo Superior de Investigaciones Cientýfic, 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 Lp 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 Shatten-p class-valued functions, we improved a previous result by Bourgain/Mcconell by giving optimal constants. This is a recent joint work with Javier Parcet. (Received February 03, 2009)