Marius Junge and Tao Mei* (tao_mei@baylor.edu), Baylor University, Waco, TX 46701, and Javier Parcet. Operator UMD property and Hörmander-Mikhlin Multipliers.

It is generally believed that every Hörmander-Mikhlin fourier multiplier extends to a bounded map on $X$-valued $L^p$ spaces for any UMD Banach space $X$ and $1 < p < \infty$. We prove that this is true if one can put an operator space structure on $X$ such that $X$ becomes an operator UMD space. The key ingredient of our argument is that every Hörmander-Mikhlin fourier multiplier is a Littlewood-Paley average of Riesz transforms associated with 1-cocycles. Joint work with M. Junge and J. Parcet. (Received August 16, 2015)