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**Tao Mei\*** (tmei@math.tamu.edu), Dept of Math., Milner Hall, Texas A&M Univ., College Station, TX 77840. *Notes on Matrix Valued Dyadic Paraproducts*. Preliminary report.

we consider dyadic paraproducts  $\pi_b$  associated with matrix valued functions  $b$ . Denote by  $S^p$  the Schatten  $p$  class and  $S^\infty$  the collection of all the compact operator on  $l_2$ . We proved that the  $L^\infty(S^\infty)$  norm of  $b$ 's is not a universal upper bound of  $\pi_b$ 's operator norm on  $L^2(l^2)$ . As a consequence, we prove that the  $BMO_{so}$  norm of the square function of  $b$  is not universally controlled by  $b$ 's  $L^\infty(S^\infty)$  norm. We also proved that  $\pi_b$ 's boundedness on  $L^p(S_p)$  implies its boundedness on  $L^q(S^q)$  for  $p < q < \infty$ . (Received September 21, 2005)