1086-42-93 **Nicholas Boros***, Olivet Nazarene University, Department of Mathematics, Bourbonnais, IL 60914. *Laminates Meet Burkholder Functions.*

Let R_1 and R_2 be the planar Riesz transforms. We compute the L^p-operator norm of a quadratic perturbation of $R_1^2 - R_2^2$ as

$$\|(R_1^2 - R_2^2, \tau \cdot Id)\|_{L^p(\mathbb{C},\mathbb{C}) \to L^p(\mathbb{C},\mathbb{C}^2)} = ((p^* - 1)^2 + \tau^2)^{\frac{1}{2}},$$

for $1 < p < 2$ and $\tau^2 \leq \frac{1}{2p-1}$ or $2 \leq p < \infty$ and $\tau \in \mathbb{R}$. To obtain the lower bound estimate of, what we are calling a quadratic perturbation of $R_1^2 - R_2^2$, we discuss a new approach of constructing laminates (a special type of probability measure on matrices) to approximate the Riesz transforms. Both the upper bound and lower bound estimates of the operator rely on using the results for the estimates on the quadratic perturbation of the martingale transform (a joint result with P. Janakiraman and A. Volberg). This is a joint result with L. Szèkelyhidi, Jr. and A. Volberg. (Received July 13, 2012)