1089-11-33 **Sanju Velani*** (slv3@york.ac.uk). *Multiplicative and Inhomogeneous Diophantine Approximation.*

A result of Gallagher implies that for almost every $(\alpha, \beta) \in \mathbf{R}^2$

$$\liminf_{q \to \infty} q \log^2 q \|q\alpha\| \|q\beta\| = 0 \, .$$

In the first part I will try to convince you that this result can be improved and thus expect more from Littlewood's Conjecture – at least from a metrical point of view. In the second part, I will investigate concrete situations in which inhomogeneous Diophantine approximation results can be derived from their homogeneous counterparts. For example, for any real number $\gamma$ , let $\mathbf{Bad}_\gamma$ denote the inhomogeneous badly approximable set consisting of real numbers $\alpha$ for which $\liminf_{q\to\infty} q\|q\alpha - \gamma\| > 0$. Then the basic construction that proves the homogeneous statement that $\mathbf{Bad}_0$ is of full dimension can be naturally adapted to show that $\dim \mathbf{Bad}_0 = 1$. Moreover, the transference idea enables us to show that any countable intersection of the simultaneous badly approximable sets $\mathbf{Bad}_\gamma(i, j)$ in the plane is of full dimension – the inhomogeneous Schmidt Conjecture. (Received January 15, 2013)