1056-00-318   **Ashley N Moses*** (`mosesan@slu.edu`), Saint Louis University, Department of Mathematics, 220 N. Grand Blvd., St. Louis, MO 63103. *Linear Dependence of Translates.* Preliminary report.

Edgar and Rosenblatt have proven that any nonzero function $f \in L^p(\mathbb{R}^n)$ with $p < 2n/(n-1)$ has linearly independent translates. More specifically, it has been shown that there exists a nonzero function $f \in L^p(\mathbb{R}^2)$, nonzero constants c_k, and distinct elements $g_k \in \mathbb{R}^2$, $k = 1...K$, such that $\sum_{k=1}^{K} c_k f(x - g_k) = 0$ only for $p \leq 4$. This talk will show that given any even number k, there exists a function $f \in L^p(\mathbb{R}^2)$ such that a multiple of f can be written as the sum of k distinct translations of itself. (Received August 28, 2009)