1084-42-308 **Geoff Diestel***, 1001 Leadership Place, Killeen, TX 76549, and **Loukas Grafakos**. *Trivial Translation Invariant Multilinear Operators.* Preliminary report.

Let $1 \leq p_1, \cdots, p_k < \infty$ and $1/q > 1/p_1 + \cdots + 1/p_k$. Then $T : L_{p_1}(\mathbf{R}^n) \times \cdots \times L_{p_k}(\mathbf{R}^n) \to L_q(\mathbf{R}^n)$ is a continuous k-linear translation invariant operator if and only if $T = 0$. For $q \geq 1$, the result follows from combining the known proof in the linear case with a subtle symmetry argument. To extend the result to $q < 1$ we use a weak-compactness argument from general factorization theory. Additional connections between translation invariant multilinear operators and recent advances in mulitilinear factorization theory are presented. (Received September 04, 2012)