1030-05-136 **Linyuan Lu**, Department of Mathematics, University of South Carolina, and **Yi Zhao***, Department of Mathematics and Statistics, Georgia State University, Atlanta, GA 30338. *On hypergraph Turán numbers.*

We first prove an exact result for hypergraphs: let p be the smallest prime factor of $r-1$ and G be an r-uniform hypergraph on $[n]$ with $n > (p-1)r$. If every $r+1$ vertices contain 0 or r edges, then G is either empty or isomorphic to $\{E \subset [n] : |E| = r, E \ni 1\}$. Then we use it to improve known bounds for hypergraph Turán numbers. We show that $\pi(K^r_{r+1}) \le 1 - \frac{1}{r} - (1+o(1))\frac{p-2}{p-1}\frac{1}{r\binom{(p-1)(r+1)}{r+1}}$ for even $r \ge 4$. In particular, we prove that $\pi(K^4_5) < 0.74586$. (Received July 28, 2007)