1127-05-190 **Tao Jiang*** (jiangt@miamioh.edu), Department of Mathematics, Miami University, Oxford, OH 45056, and **Jie Ma**. *Cycles of given lengths in hypergraphs.* Preliminary report.

In this talk, we introduce a new method for studying cycle lengths in hypergraphs in place of the well-known lemma of Bondy and Simonovits. The new method appears to be more versatile. Using this new method, we prove a conjecture of Verstraëte that for $r \geq 3$, every r-uniform hypergraph with average degree $\Omega(k^{r-1})$ contains Berge cycles of k consecutive lengths. In addition, we prove that every r-uniform linear hypergraph with average degree at least $\Omega(k)$ contains linear cycles of k consecutive lengths. Both results are tight up to multiplicative constants.

In both of these results, we have additional control on the lengths of the cycles, which allows us to obtain corresponding bounds on the Turán numbers of Berge cycles and the linear Turán numbers of linear cycles that improve on the previous best known bounds. (Received February 02, 2017)