1086-05-1742 **Zoltan Furedi*** (z-furedi@illinois.edu), Rényi Institute of Mathematics, Budapest. *Trees and cycles in hypergraphs.* Preliminary report.

There are many interesting definitions of cycles and trees in hypergraphs. We call a sequence of distinct sets $E_1, \dots, E_\ell$ and vertices $x_1, \dots, x_\ell$ a *Berge cycle* of length ℓ if $x_i \in E_i$ and $x_i \in E_{i+1}$ (for $1 \leq i < \ell$) and $x_\ell \in E_1$ hold. We call it a *loose* cycle if the hyperedges have no triple intersection and $E_i \cap E_j \neq \emptyset$ implies $|i-j| = 1 \pmod{\ell}$. A loose cycle is *q-tight* if $|E_i \cap E_{i+1}| \leq q$ holds for consequtive pairs. The case $q = 1$ defines a *linear* cycle.

A sequence of distinct sets $E_1, \dots, E_s$ is called a *forest* if for every edge E_i with $2 \leq i \leq s$ there exists an $1 \leq \alpha(i) < i$ such that E_α is the root edge of E_i, i.e., $E_i \setminus E_\alpha$ is disjoint from $\cup_{j<i} E_j$.

After a brief review we discuss some properties of trees in hypergraphs (a joint work with Tao Jiang) and also discuss the minimum size of hypergraphs avoiding certain cycles thus improve some recent results of Győri et al.

Many problems remain open. (Received September 24, 2012)