1069-05-326   **Zoltan Furedi*** (`z-furedi@illinois.edu`), Department of Mathematics, University of Illinois at Urbana-Champaign, 1409 W Green Street, Champaign, IL 61801. *2-cancellative uniform hypergraphs.* Preliminary report.

A family $\mathcal{F}$ of sets is called 2-cancellative if for any four distinct members $A, B, C, D \in \mathcal{F}$

$$A \cup B \cup C \neq A \cup B \cup D.$$

We consider $M(n, k)$, the size of the largest 2-cancellative k-uniform family on n vertices, thus answering a question of G. O. H. Katona. Many problems remain open.

This is in fact, a Turán type problem, and has many connections to other well-known questions like the Ruzsa-Szemerédi $(6, 3)$-theorem. The constructions (of the almost) optimal hypergraphs are algebraic. (Received January 25, 2011)