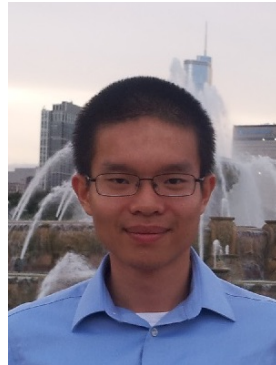# *Forbidding tight cycles in hypergraphs*

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Room 416, School of Mathematics, Sun Yat-sen University

A tight k-uniform ℓ-cycle, denoted by TC_ℓ^k, is a k-uniform hypergraph whose vertex set is $v_0, \ldots,$ $v_{\ell-1}$, and the edges are all the k-tuples $\{v_i, v_{i+1}, \ldots, v_{i+k-1}\}$, with subscripts modulo ℓ. Motivated by a classic result in graph theory that every n-vertex cycle-free graph has at most $n-1$ edges, Sós and, independently, Verstraëte asked whether for every integer k, a k-uniform n-vertex hypergraph without any tight k-uniform cycles has at most $\binom{n-1}{k-1}$ edges. In this talk I will present a construction giving negative answer to this question, and discuss some related problems. Joint work with Jie Ma.

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