

COMBINATORICS
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The Extremal Number of Tight Cycles

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Abstract: A tight cycle in an r -uniform hypergraph \mathcal{H} is a sequence of $\ell \geq r + 1$ vertices x_1, \dots, x_ℓ such that all r -tuples $\{x_i, x_{i+1}, \dots, x_{i+r-1}\}$ (with subscripts modulo ℓ) are edges of \mathcal{H} .

An old problem of V. Sós, also posed independently by J. Verstraëte, asks for the maximum number of edges in an r -uniform hypergraph on n vertices which has no tight cycle. Although this is a very basic question, until recently, no good upper bounds were known for this problem for $r \geq 3$. In my talk, I will present a brief outline of the proof of the upper bound $n^{r-1+o(1)}$, which is tight up to the $o(1)$ error term. This is based on a joint work with Benny Sudakov.

Friday, October 2, 2020, 10:00 am
<https://emory.zoom.us/j/96323787117>

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