



Discrete Mathematics and Computer Science Seminars  
Department of Mathematical Sciences, Sharif University of Technology

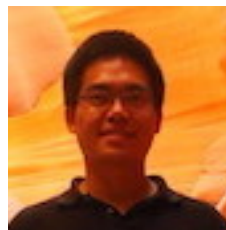
# Sharp bound on the number of maximal sum-free subsets of integers

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## Abstract

Cameron and Erdős asked whether the number of *maximal* sum-free sets in  $\{1, \dots, n\}$  is much smaller than the number of sum-free sets. In the same paper they gave a lower bound of  $2^{\lfloor n/4 \rfloor}$  for the number of maximal sum-free sets. Here, we prove the following: For each  $1 \leq i \leq 4$ , there is a constant  $C_i$  such that, given any  $n \equiv i \pmod{4}$ , then  $\{1, \dots, n\}$  contains  $(C_i + o(1))2^{n/4}$  maximal sum-free sets.

Our proof makes use of container and removal lemmas of Green, a structural result of Deshouillers, Freiman, Sós and Temkin and a recent bound on the number of subsets of integers with small sumset by Green and Morris. We also discuss related results and open problems on the number of maximal sum-free subsets of abelian groups.

(This is joint work with József Balogh, Maryam Sharifzadeh and Andrew Treglown.)

Monday, **5 Mehr 1395** (26 September 2016), **16:15-17:15**  
Room **317**, Department of Mathematical Sciences

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