University of Mississippi

Number Theory–Combinatorics Joint Seminar

A Zero-Sum Conjecture of Hamidoune

Tuesday March1st, 2016
4:00 PM–4:50 PM at Hume 331

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ABSTRACT

In 2003, Hamidoune made the following conjecture. Let G be a finite abelian group of order n, let S be a sequence of $|S| \geq n+1$ terms from G with at least k distinct terms, and let $\Sigma_n(S)$ denote those elements of G obtainable by summing a subselection of n terms from S. Then either $0 \in \Sigma_n(S)$ or $|\Sigma_n| \geq |S| - |G| + k - 1$. This is a typical example from a family of similar conjectures made at the time. Since then, tools like the Devos-Goddyn-Mohar and Partition Theorem have allowed most of the conjectures from this family to be resolved by now standard techniques. However, the conjecture in question here is a rare exception. We talk about a generalization of this conjecture and how it can be proved using a combination of these techniques along with an older result of Eggleton and Erdős. Reasearch is joint with Gao and Xia.