THE UNIVERSITY OF HONG KONG

Department of Mathematics

Departmental Seminar

Zero-Sum Problems

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Abstract

In 1961, Erdos, Ginzburg and Ziv (EGZ) proved that for any given sequence $a_1, a_2, \ldots, a_{2n-1}$ of integers, one can find a subsequence of length n such that its sum is divisible by n for all $n \geq 1$. Also, the constant $2n - 1$ is tight. In 1966, Davenport posed the following question. Let G be a finite abelian group (additively written). What is the smallest constant, $D(G)$, such that given any sequence $a_1, a_2, \ldots, a_\ell$ $(a_i \in G, \ell \geq D(G))$ has a subsequence whose sum is the identity element of G? The result of EGZ and the question of Davenport genearated interest over the period of years and a branch of Combinatorial Number Theory called "Zero-Sum problems" emerged. In this talk, we shall concentrate on certain zero-sum problems on the group $G = \mathbf{Z}_p \oplus \mathbf{Z}_p$ where $\mathbf{Z}_p$ is the cyclic group of prime order p. Also, we discuss the inter-relationships over four different conjectures of van Emde Boas, Kemnitz, Gao, Geroldinger et al.

Date: September 5, 2002 (Thursday)

Time: 11:00am

Place: Room 517, Meng Wah Complex

All are welcome