Meeting: 1007, Santa Barbara, California, SS 3A, Special Session on Recent Advances in Combinatorial Number Theory

1007-05-19   **David Joseph Grynkiewicz*** (`diambri@hotmail.com`), Mathematics 253-37, Caltech, Pasadena, CA 91125. *A Weighted Version of the Erdös-Ginzburg-Ziv Theorem.*

The following conjecture of Y. Caro is proven. If S is a sequence of $n + m - 1$ elements from an abelian group of order m and exponent k, and if $W = \{w_i\}_{i=1}^n$ is a sequence of integers whose sum is zero modulo k, then there exists a rearranged subsequence $\{b_i\}_{i=1}^n$ of S whose W-weighted sum $\sum_{i=1}^n w_i b_i$ is 0. This extends the Erdös-Ginzburg-Ziv Theorem, which is the case when $m = n$ and $w_i = 1$ for all i. A further extension of this result, concerning when there exists an entire nontrivial subgroup having all of its elements representable as the sum of some W-weighted rearranged subsequence of S, is also proved, which establishes several cases in a related conjecture of Y. O. Hamidoune. (Received November 27, 2004)