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Michael A Freeze* (freezem@uncw.edu), UNC Wilmington, Department of Mathematics and Statistics, 600 South College Rd, Wilmington, NC 28403. *Construction of Zero-sum Sequences with Prescribed Zero-subsum Structure*. Preliminary report.

Let $F(G)$ denote the free abelian monoid with basis given by the elements of a finite abelian group G . The block monoid over G has as elements the members $S = g_1 \cdots g_t$ of $F(G)$ for which $g_1 + \cdots + g_t = 0$ in G . These members S are called zero-sum sequences in G , and zero-sum sequences in G having no proper, non-empty zero-sum subsequences are called minimal zero-sum sequences. We consider the construction of zero-sum sequences $S = g_1 \cdots g_t$ in G having t large and all proper zero-sum subsequences of S minimal, and describe the connection of this problem to non-unique factorization in rings of algebraic integers. (Received August 19, 2008)