On a variation of Hindman's Finite Sums Theorem

Hanno Lefmann, TU Chemnitz, Germany

Hindman's Finite Sums Theorem states that for every coloring of the set $\mathbf{N}$ of positive integers with a finite number of colors there exist infinitely many positive integers $x_1 < x_2 < \cdots$ such that all their finite nonempty sums (without repetitions) are colored the same. We consider a variation of this result by looking at k-term sums only, k fixed, where the summands have coefficients according to a fixed vector $(a_1, \ldots, a_k)$ of integers. In the Finite Sums Theorem all coefficients are ones.

Keywords: Ramsey theory, partition regular systems of equations