More Sums than Differences Sets and Beyond.

A more sums than differences (MSTD) set is a finite subset $S$ of integers such that $|S + S| > |S - S|$. We present some new results on MSTD subsets of $\{0, 1, \ldots, n\}$ that address the following two questions: (1) what proportion of the subsets are MSTD sets? (2) what does a typical MSTD set look like?

In general, our results work for any specification on the number of missing sums and the number of missing differences of $S$, with MSTD sets being a special case. (Received August 31, 2009)