

Exposé court

70 **Problems and results on additive representation functions associated to linear forms**

Kiss, Sándor (Budapest University of Technology and Economics)

Let $k \geq 2$ and $\lambda_1, \dots, \lambda_k$ be fixed positive integers. For a set A of nonnegative integers, the additive representation function associated to linear forms is

$$R_{A, \underline{\lambda}}(n) = |\{(a_1, \dots, a_k) \in A^k : \lambda_1 a_1 + \dots + \lambda_k a_k = n\}|.$$

In my talk I would like to summarize our recent results about representation functions associated to linear forms. We will extend an earlier result of Nathanson to representation functions associated for linear forms. Furthermore, we will describe all the k -tuples $\underline{\lambda} = (\lambda_1, \dots, \lambda_k)$ and the sets of nonnegative integers A with $R_{A, \underline{\lambda}}(n) = 1$ for every nonnegative integer n . We also have several open problems for further research. This is joint work with Csaba Sándor.