

## Maximal density of $M$ -sets

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Let  $M$  be a given nonempty set of positive integers. A set  $S$  of nonnegative integers is called an  $M$ -set, if  $a, b \in S$  implies that  $a - b \notin M$ . Motzkin asks to find the maximal density for  $M$ , denoted by  $\mu(M)$ , and defined by

$$\mu(M) := \sup_S \bar{\delta}(S),$$

where  $\bar{\delta}(S)$  is the upper asymptotic density of  $S$  and the supremum is taken over all  $M$ -sets  $S$ . Only in the case when  $|M| \leq 2$ ,  $\mu(M)$  is completely known and it is not known in general if  $|M| \geq 3$ . In this talk, we discuss some recent results on  $\mu(M)$ , where  $M$  consists of the consecutive generalized Fibonacci numbers.