

## A note on a result of Nathanson

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**Abstract.** Let  $h \geq 2$  be a positive integer. Let  $W$  be a nonempty subset of  $\mathbb{N}$ . Denote by  $\mathcal{F}^*(W)$  the set of all finite, nonempty subsets of  $W$ . Let  $A(W)$  be the set of all numbers of the form  $\sum_{f \in F} 2^f$ , where  $F \in \mathcal{F}^*(W)$ . Is the asymptotic basis  $A = \cup_{i=1}^h A(W_i)$  minimal for any partition  $\mathbb{N} = W_1 \cup \dots \cup W_h$ ? Nathanson [Minimal bases and powers of 2, *Acta Arith.* **49** (1988), 525–532] showed that this is false for  $h = 2$ . In this paper, we consider this problem for all  $h \geq 2$ .

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