

## DENSE INFINITE $B_h$ SEQUENCES

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**Abstract:** For  $h = 3$  and  $h = 4$  we prove the existence of infinite  $B_h$  sequences  $\mathcal{B}$  with counting function

$$\mathcal{B}(x) = x^{\sqrt{(h-1)^2+1}-(h-1)+o(1)}.$$

This result extends a construction of I. Ruzsa for  $B_2$  sequences.

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**Key words:**  $B_h$  sequences, Sidon sequences, probabilistic method.