

Abundant numbers and \mathcal{B} -free systems

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Let $\mathcal{B} \subset \{2, 3, \dots\}$. The set of multiples $\bigcup_{b \in \mathcal{B}} b\mathbb{Z}$ is denoted by $\mathcal{M}_{\mathcal{B}}$. These sets were studied in the 1930s by Bessel-Hagen, Chowla, Davenport and Erdős. In particular, they were interested in *abundant numbers*, i.e., the set of $n \in \mathbb{Z}$ for which $|n|$ is greater than or equal to the sum of its (positive) proper divisors. Elements of the complement of $\mathcal{M}_{\mathcal{B}}$ are called *\mathcal{B} -free numbers*. In 2010 Sarnak suggested studying dynamical properties of the square-free subshift which is obtained by taking the orbit closure of the characteristic function of square-free numbers (\mathcal{B} is the set of squares of all primes) respect to the left shift. This leads to the study of \mathcal{B} -free subshifts in general. I will present some results on abundant numbers from the joint paper with Kasjan, Kułaga-Przymus and Lemańczyk.

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