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Empirical approach to the $\times 2, \times 3$ conjecture. (English) Zbl 07507086

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Summary: We study atomic measures on $[0,1]$ which are invariant both under multiplication by $2 \mod 1$ and by $3 \mod 1$ since such measures play an important role in deciding Furstenberg’s $\times 2, \times 3$ conjecture. Our specific focus was finding atomic measures whose supports are far from being uniformly distributed, and we used computer software to discover a number of such measures (which we call outlier measures). The structure of these measures indicates the possibility that a sequence of atomic measures may converge to a non-Lebesgue measure; likely one which is a combination of the Lebesgue measure and one or more atomic measures.

MSC:

68-XX Computer science
28-XX Measure and integration

Keywords:
Furstenberg conjecture; dynamical system; ergodic measure

Full Text: DOI

References:

Theory, 1, 1-4 (1967)


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