Downarowicz, Tomasz; Huczek, Dawid
Empirical approach to the $\times 2, \times 3$ conjecture. (English) Zbl 07507086
Exp. Math. 31, No. 1, 252-268 (2022)

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:
[1] Furstenberg, H., Disjointness in Ergodic Theory, Minimal Sets, and a Problem in Diophantine Approximation, Math. Sys. Theory, 1, 1-4 (1967)
[2] Rudolph, D., 2 and 3 Invariant Measures and Entropy, Ergodic Theory Dynam. Syst, 10, 395-406 (1990)

This reference list is based on information provided by the publisher or from digital mathematics libraries. Its items are heuristically matched to zbMATH identifiers and may contain data conversion errors. It attempts to reflect the references listed in the original paper as accurately as possible without claiming the completeness or perfect precision of the matching.