

Thomas Jordan, Fourier transforms and continued fractions.

Joint work with Tuomas Sahlsten. A result of Kaufman shows that there is a probability measure which gives full measure to the set of badly approximable numbers and for which the Fourier transform of the measure decays polynomially. For such a measure almost every point x will satisfy that for $m > 1$, an integer, $\{m^k x \bmod 1\}_{k \in \mathbb{N}}$ will be equidistributed in $[0, 1]$. We will show that the methods Kaufman used can be adapted to show that a class of invariant measures for the Gauss map also have Fourier transform which decay polynomially. This class includes the Fourier-Stieltjes measure for the Minkowski question mark function.