

1144-37-207

Vasileios Chousionis* (vasileios.chousionis@uconn.edu), University of Connecticut, 341
Mansfield Road U1009, Storrs, CT 06269. *On the dimension spectrum of continued fractions.*

The dimension spectrum of an iterated function system is the set of all possible values of the Hausdorff dimension of its subsystems. We study the dimension spectrum of general conformal graph directed Markov systems, with emphasis on conformal iterated function systems associated to real and complex continued fractions. According to the Texan conjecture, proven by Kessebohmer and Zhu in 1996, the dimension spectrum of real continued fractions is full. We consider the dimension spectrum of continued fractions with coefficients restricted to infinite subsets of natural numbers. We prove that if the alphabet $E \subset \mathbb{N}$ is any arithmetic progression, the set of primes, or the set of squares then the continued fractions whose digits lie in E have full dimension spectrum. On the way we employ the computational approach of Falk and Nussbaum in order to obtain rigorous effective estimates for the Hausdorff dimension of continued fractions whose entries are restricted to infinite sets. Finally we show that the system resulting from the complex continued fractions algorithm has full dimension spectrum. We thus give a positive answer to the Texan conjecture for complex continued fractions. Based on joint works with Dmitriy Leykekhman (UConn) and Mariusz Urbanski (UNT). (Received August 25, 2018)