Applications of PPC-fractions and Szego polynomials to frequency analysis

C. Craviotto and W. B. Jones
Department of Mathematical Sciences,
University of Northern Colorado
Greeley, Colorado 80639 U.S.A.
cathleen.craviotto@unco.edu

The frequency analysis problem consists of determining unknown frequencies (possibly anharmonic) from a signal consisting of the superposition of sinusoidal waves using a sample of observed data at equal intervals of time. Much work has been published on the mathematical theory of positive Perron-Caratheodory continued fractions (PPC-fractions) and Szego polynomials and their application to frequency analysis. This talk explores applications of this theory to specific examples of frequency analysis, illustrating the effectiveness of the method and its limitations.