Abstract

Music and mathematics are two subjects more related to one-another than most people know. A single melody can be thought of as a sequence of changing pitch frequency intervals, along side a sequence of rhythmic durations. In this project we will first explore ways in which to translate musical melodies into real-valued numerical sequences, and second we will study these sequences by applying familiar fractal dimension metrics in an attempt to explore fractal patterns in music and build insight into what "fractal music" really means.

Earliest attempts of measuring fracticality in music performed by Richard Voss and John Clarke indications of $1/f$ scaling.

1. Motivic scaling
2. Duration scaling
3. Pitch-related scaling

Scaling A