

A MATHEMATICAL EYE FOR MUSIC THEORY

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In this talk, intended for a general mathematical audience, after a brief excursus on basic facts of music theory, I will discuss the mathematical representations of harmony (as the branch of music concerned about simultaneously occurring notes and chord sequences) and voice leading (generalising the concept of counterpoint, as the branch of music concerned about sequences of individual notes in a series of chords forming simultaneous melodies) in Western classical music. In particular, I will focus on Euler's Tonnetz, or lattice diagram of the tonal space, and Tymoczko's orbifold theory of musical chords. If time allows, I will briefly touch the problem of automatic classification of musical styles via topological approaches.