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Joint Colloquium Mathematics and Music

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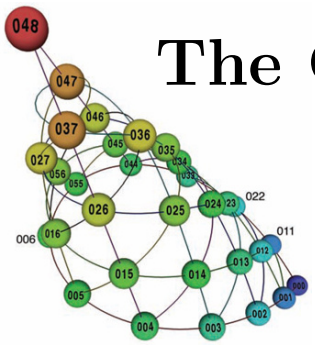

The Geometry of Music

Dmitri Tymoczko

Princeton University

ABSTRACT: In my talk, I show how to translate the language of elementary music theory into that of contemporary geometry. It turns out that concepts such as "chord" and "chord type" are naturally represented by points in geometrical spaces known as "orbifolds." Understanding these spaces can help us to understand general constraints on musical style, as well as the inner workings of specific pieces. For example, we will see that Mozart, Chopin, and Schubert made very sophisticated use of a necklace of four-dimensional cubes representing four-note chords. The talk will be accessible to non-musicians and will exploit interactive 3D computer models that allow us to see and hear music simultaneously.

Monday, 6 December 2010

Lecture at 4:15 pm – 5:15 pm

Room B04, Tyler Building

Coffee and tea at 3:40 pm – 4:10 pm

Everybody is invited.