

**THE HARMONIC MATRIX**  
EXPLORING THE GEOMETRY OF PITCH

Darryl Bond  
bond@bondmatrix.com

**There is geometry in the humming of the strings,  
There is music in the geometry of the spheres.**  
Pythagoras of Samos

**ABSTRACT**  
This paper explores the geometry of pitch and the relationship between the harmonic series and the geometry of the sphere. It is a study of the geometry of pitch and the relationship between the harmonic series and the geometry of the sphere. It is a study of the geometry of pitch and the relationship between the harmonic series and the geometry of the sphere.

**THE HARMONIC MATRIX**  
The Harmonic Matrix is a mathematical structure that represents the relationship between the harmonic series and the geometry of the sphere. It is a study of the geometry of pitch and the relationship between the harmonic series and the geometry of the sphere.

**DEFINITIONS & DIAGRAMS**

**THE HARMONIC MATRIX**  
The Harmonic Matrix is a mathematical structure that represents the relationship between the harmonic series and the geometry of the sphere. It is a study of the geometry of pitch and the relationship between the harmonic series and the geometry of the sphere.

**THE GEOMETRIC MATRIX**  
The Geometric Matrix is a mathematical structure that represents the relationship between the harmonic series and the geometry of the sphere. It is a study of the geometry of pitch and the relationship between the harmonic series and the geometry of the sphere.

**THE GOLDEN MATRIX**  
The Golden Matrix is a mathematical structure that represents the relationship between the harmonic series and the geometry of the sphere. It is a study of the geometry of pitch and the relationship between the harmonic series and the geometry of the sphere.

**ACCESS & APPLICATIONS**

This is a study of the geometry of pitch and the relationship between the harmonic series and the geometry of the sphere. It is a study of the geometry of pitch and the relationship between the harmonic series and the geometry of the sphere.

Presented at International Computer Music Conference and Subtle Technologies, 2011 [poster sessions].

Email me if you'd like a larger, more legible version of this poster. Somewhat easier to follow than the paper, I now know that this poster and the paper deeply gouge the surface of this subject but there is still more to be done. Already the hybrid matrices and variable, irregular dimensional structures beg for more attention.

Many thanks to those who visited the poster and tested out the devices.

## ICMC - Harmonic Matrix Theory

Written by D. Bond

Tuesday, 02 August 2011 17:27 - Last Updated Friday, 27 March 2015 19:08

---

The ustring equation was not published. define  $q$  as the matrix dimension then values are given by:

$$n > 0 = q / (q - n)$$

$$n < 0 = (q - |n|) / q$$

then Eureka! Quite simple - in one step:  $(q / (q - |x| + 1))^{(x / |x|)}$ .

My bad for not solving this prior to publication.

Copies of the ICMC paper available [here -external link](#) . Feedback and inquiries most welcome.