

# Math & Computer Science Colloquium

Presents:

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Speaking on:

## Can You Hear the Harmonic Series Diverging?

The language of mathematics often coincides with that of music. In this talk, I explore the connection suggested by the harmonic series, a mathematical name that has a powerful suggestion of music in it. The harmonic series is well-known to mathematics students because it provides an interesting example of divergence. Can the musical content of the harmonic series help us understand how this divergence happens? By developing definitions that assign musical sounds to the terms of a series in a natural way, we can produce sonic versions of several convergence theorems. This leads us to the conclusion that yes, you can hear the sound of divergence in the harmonic series if you know what to listen for! Along the way, we will also find satisfying musical examples of convergent geometric series.

**October 13, 2011**

**3:30 PM**

**Palenske 227**

