

Do Irrationals Exist?



Dr. Svetlana Jitomirskaya

Svetlana Jitomirskaya grew up in Kharkov, Ukraine, in a family of mathematicians. After getting her undergraduate and graduate degrees in Moscow, Russia, she came to California, where she is raising the next generation of mathematicians in her family and working at UC Irvine, moving there through the ranks from a part time lecturer to a full professor. She was an ICM speaker in 2002, AMS Ruth Lyttle Satter prize winner in 2005, and vice-president of the International Association of Mathematical Physics in 2011-14.

Rational numbers are closely surrounded by the irrational numbers and vice versa, yet many objects in physics have properties that vary dramatically depending on the arithmetic characteristics of measurable parameters.

Quasiperiodic operators, a model related to the study of the quantum Hall effect and to the famous Hofstadter butterfly, is one field where such phenomena are rampant. We will present this paradox and then discuss how this can be interpreted in a hopefully-non-contradictory way.

$$\gamma(E) \geq \max \left\{ \ln \lambda - \ln \left(1 - \frac{\epsilon(E)}{r} \right) \right\}$$

Thursday, April 14th
6:30 - 7:30 PM

Natural Sciences 112
University of Louisville

**Free and
Open to
the Public**

For more information
Call: 502.852.6825
Email math@louisville.edu
<http://www.math.louisville.edu/Bullitt/>

