The Math/Stats Colloquium
Department of Mathematics and Statistics
San José State University

Craig S. Kaplan

U. Waterloo

Aperiodic Monotiles

Wed Oct 18, 2023, via Zoom

Abstract: A set of shapes is called *aperiodic* if they admit tilings of the plane, but none that have translational symmetry. Starting in the 1960s, progress in our understanding of such tilings produced progressively smaller aperiodic sets, but failed to arrive at a single shape that tiles aperiodically, also known as an *aperiodic monotile*. In 2023, we resolved that open question by proving that the "hat", a union of eight kites, is an aperiodic monotile. In this talk I provide background on aperiodicity and related topics in tiling theory, review the history of the search for an aperiodic monotile, relate the story of the discovery of the hat, and discuss its properties and some of the other results that have followed in its wake.

Background: No particular background necessary.

About the speaker: Craig S. Kaplan is an Assoc. Prof. of Computer Science at U. Waterloo. He studies the application of computer graphics and mathematics to problems in art, architecture and design. He is a member of the board of the Bridges Organization and helps to run their annual conference on mathematics and art.

Talk starts at 3:00pm
E-mail tim.hsu@sjsu.edu for Zoom link

For more information, see our full schedule at:

`http://www.timhsu.net/colloq/`