2017-2018 IMA Public Lectures

Impossible Objects

THE MATHEMATICS OF 3D ILLUSIONS

Kokichi Sugihara, Meiji University

Possessing such remarkable visual capabilities, humans believe they can always perceive and understand the shape of objects correctly. Under the phenomenon of visual illusion, however, what humans see differs from reality. "Impossible objects" are a type of 3D visual illusion that are 2D pictures which give the impression of having inconsistent 3D structures. But real 3D objects were later discovered, with the aid of mathematics, which give the impression of impossibility, such as impossible structures and impossible motions. In this lecture, Kokichi Sugihara will show the various behaviors of "impossible objects," together with the mathematics behind them, and consider why human perception is so easily fooled by these kinds of visual illusions.

NINTH ANNUAL ARNOLD FAMILY LECTURE

Wednesday, February 21, 2018 / 7:00 p.m.

Coffman Memorial Union Theater • 300 Washington Ave. SE
East Bank, University of Minnesota, Minneapolis

Institute for Mathematics and its Applications

University of Minnesota
Driven to Discover℠

2017-2018 IMA Public Lectures

February 21, 2018 / 7:00 p.m.

Coffman Memorial Union Theater • 300 Washington Ave. SE
East Bank, University of Minnesota, Minneapolis

Impossible Objects

THE MATHEMATICS OF 3D ILLUSIONS

Kokichi Sugihara is a professor at Meiji University in Tokyo, Japan. He previously taught mathematical engineering as a professor at the University of Tokyo. His research involves Voronoi diagrams and their applications, robust implementation of geometric algorithms, computer vision and computer graphics, and mathematics in visual perception. Sugihara is known for his award-winning 3D optical illusions, winning first place at the Best Illusion of the Year contest in 2010 and 2013 and second place in 2015 and 2016, all of which were produced with a computer program he created.

For more information: 612-624-6066 • www.ima.umn.edu

COLLEGE OF Science & Engineering
UNIVERSITY OF MINNESOTA

The Institute for Mathematics and its Applications connects scientists, engineers, and mathematicians in order to address scientific and technological challenges in a collaborative, engaging environment, developing transformative, new mathematics and exploring its applications, while training the next generation of researchers and educators.

Institute for Mathematics and its Applications
University of Minnesota
400 Lind Hall
207 Church Street, SE
Minneapolis, MN 55455

Nonprofit Org.
U.S. Postage
PAID
Twin Cities, MN
Permit No. 90155