Berlin Mathematics Research Center MATH+

Berlin Mathematical School BMS

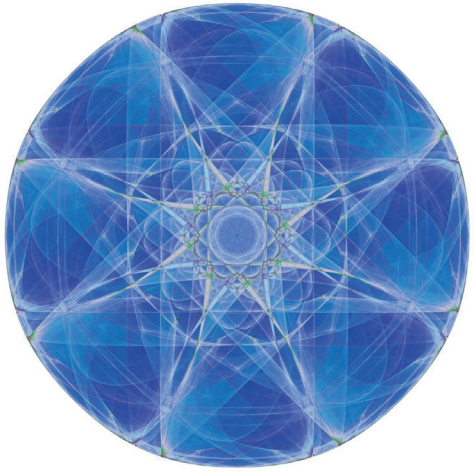
MATH+ Friday Colloquium

Friday 11 December 2020 at 15:15

Online (Zoom)

Amie Wilkinson

(U Chicago)



Symmetry and asymmetry in dynamics

In classical mechanics, symmetry occurs for a reason: there is a conserved quantity such as angular momentum. This is Noether's theorem, and it points to a broader theme in dynamics that symmetry is rare and meaningful. I will discuss, in the contexts of modern dynamics and geometry, how this theme recurs in beautiful ways: on the one hand, a typical object has the minimum amount of symmetry possible, and on the other hand, a little extra symmetry implies a lot of symmetry, a phenomenon known as rigidity.

Amie Wilkinson received her bachelor degree from Harvard University in 1989 and her PhD from the University of California, Berkeley in 1995 under the direction of Charles C. Pugh. She is currently a professor of mathematics at the University of Chicago. In her work Wilkinson focuses on the geometric and statistical properties of diffeomorphisms and flows with a particular emphasis on stable ergodicity and partial hyperbolicity. Together with Christian Bonatti and Sylvain Crovisier, Wilkinson studied centralizers of diffeomorphisms settling the C^1 case of the twelfth problem on Stephen Smale's list of mathematical problems for the 21st Century. In 2010, she gave an invited talk, "Dynamical Systems and Ordinary Differential Equations", at the International Congress of Mathematicians in Hyderabad, India.