MATH-IMS Joint Pure Mathematics Colloquium Series
The Chinese University of Hong Kong

This Colloquium Series in Pure Mathematics is organized by the Department of Mathematics and the Institute of Mathematical Sciences (IMS) at The Chinese University of Hong Kong. The series focuses on all areas of pure mathematics together with theoretical developments and applications.

Date: November 11, 2021 (Thursday)
Time: 10:00-11:00 (Hong Kong Time)
Zoom Link: https://cuhk.zoom.us/j/98846779826

Quantitative Stability in the Calculus of Variations

Speaker: Professor Robin Neumayer
Carnegie Mellon University

Abstract: Among all subsets of Euclidean space with a fixed volume, balls have the smallest perimeter. Furthermore, any set with nearly minimal perimeter is geometrically close, in a quantitative sense, to a ball. This latter statement reflects the quantitative stability of balls with respect to the perimeter functional. We will discuss recent advances in quantitative stability and applications in various contexts. The talk includes joint work with several collaborators and will be accessible to a broad research audience.

Bio: Prof. Neumayer obtained her B.Sc. degree in mathematics at the University of South Carolina and her PhD at the University of Texas, Austin under the supervision of Prof. Alessio Figalli and Francesco Maggi. After graduating in 2017, she became an RTG postdoctoral fellow at Northwestern University and a member of the Institute for Advanced Study during 2018-19. From the fall of 2021, she has been the Gregg Zeitlin Early Career Professor at Carnegie Mellon University. Prof. Neumayer's research interest lies at the interface of the calculus of variations, PDE and geometric analysis. She has made tremendous contributions in these areas, particularly on the stability of functional and geometric inequalities.