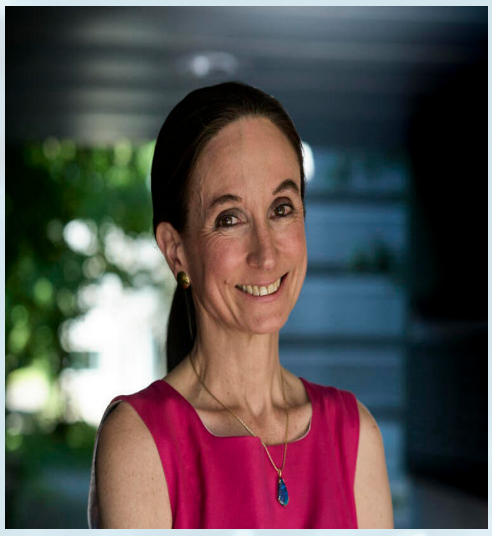
Topological Perspectives on Networks

Online Talk via Zoom

Date and time

17 June 2024, 15:00 pm
Singapore (GMT +8)

17 June 2024, 9:00 am
Central European Time (GMT +2)



Kathryn Hess

EPFL Switzerland

About the talk

Over the past decade or so, tools from algebraic topology have been shown to be very useful in the analysis and characterization of networks, in particular for exploring the relation of structure to function. I will describe some of these tools and illustrate their utility in neuroscience in particular, hoping to inspire use for other networks relevant in biology, such as gene regulatory networks, metabolic networks, and protein-protein interaction networks.

This lecture is part of the

"IMS-NTU joint workshop on Biomolecular Topology: Modelling and Data Analysis"

Register Here

https://forms.office.com/r/J6kc77nMmM

Registered participants will receive zoom link two days prior to the talk.

Biography

Professor Bellwald's research focuses on algebraic topology and its applications, primarily in the life sciences, but also in materials science. She has published extensively on topics in pure algebraic topology including homotopy theory, operad theory, and algebraic K-theory. On the applied side, she has elaborated methods based on topological data analysis for high-throughput screening of nanoporous crystalline materials, classification and synthesis of neuron morphologies, and classification of neuronal network dynamics.

She has won several teaching prizes at EPFL, including the Crédit Suisse teaching prize in 2011 and the Polysphère d'Or in 2013. In 2016 she was elected to Swiss Academy of Engineering Sciences and was named a fellow of the American Mathematical Society and a distinguished speaker of the European Mathematical Society in 2017. In 2021 she gave an invited Public Lecture at the European Congress of Mathematicians. She was awarded the Chaire de la Vallée Poussin by the Université Catholique de Louvain-la-Neuve in 2023 and was named a fellow of the Association for Women in Mathematics in 2024.

Profile Photo by Eddy Mottaz (Le Temps)

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