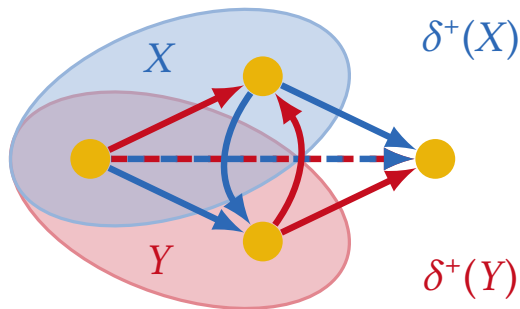


## Tuesday 21 February 2023 - Afternoon Talks

Magnus-Haus Berlin



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**15:00 Martin Skutella** (TU Berlin)**Network flows over time and submodular function minimization**

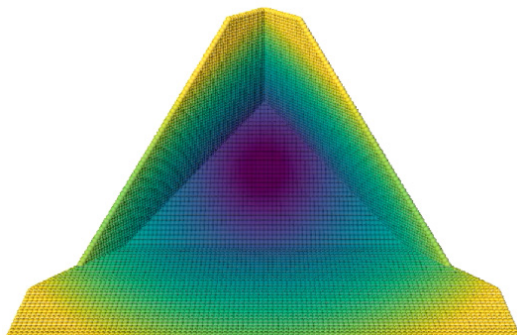
Network flows belong to the most fundamental problems in Combinatorial Optimization that have been studied intensively for roughly 70 years. We are particularly interested in flows over time that model the routing of traffic through a network over time. Adding a temporal dimension, however, complicates things quite a bit. In this talk, Skutella will highlight a fascinating connection between flows over time and submodular function minimization.

Martin Skutella is Einstein professor of Mathematics and Computer Science at TU Berlin and currently serves as co-chair of the Berlin Mathematics Research Center MATH+. ▲

**15:30 Vikram Sunkara** (FU Berlin/ZIB)**Seeing artificial neural networks with the eyes of a mathematician**

Artificial Neural Networks (A.I.) have become an ubiquitous tool in society. They permeate through nearly all facets of our modern lives from leisure recommendations to more critical medical diagnosis. In this talk, Sunkara will study a simple artificial neural network, and describe its design through the lenses of functional analysis, stochastics, geometry; and lastly, speculate and discuss on how to encompass these different topics into a single unified framework to study Artificial Neural Networks.

Vikram Sunkara is the head of the research group Explainable AI for Biology at Zuse Institute Berlin (ZIB). ▲



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