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HU Berlin, Dorotheenstraße 24, Fritz-Reuter-Saal



László Lovász

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Ferdinand Georg Frobenius (1849 – 1917)

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László Lovász

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Submodularity: Finite and Infinite

In the last 25 years, limit theories for graphs and other combinatorial structures have been worked out, allowing to approximate large finite structures by smoother, continuous structures.

The matroid of a graph is an associated structure, carrying a lot of information about the graph. Matroids, and more generally submodular setfunctions on finite sets, play an important role in combinatorial optimization. The search for the limit object for matroid sequences takes us to research on submodular setfunctions in a measure theoretic setting, going back to the seminal work of Choquet on capacities.

These two research lines have had little interaction. In this talk I will explain the discovery of interesting connections between the combinatorial and analytic research directions on submodularity.

László Lovász is widely regarded as one of the most influential discrete mathematicians ever, having made fundamental contributions to graph theory, combinatorics and theoretical computer science. He is the winner of the Abel Prize (2021), the Wolf Prize and has also served as the President of the International Mathematical Union. During this trip to Berlin, Lovász will be awarded the Helmholtz Medal of the Berlin-Brandenburg Academy of Sciences and Humanities.