



Invitation

Logic Colloquium

Tobias Sutter

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*From Machine learning to
topological linear system identification*

the talk will take place
on **Monday, 25.04.2022** at **15:15** in room **F420**.

All interested are welcome to attend

Abstract: Given the recent progress in information technology with real-time data being available at large scale, many complex tasks involving dynamical environments are addressed via tools from machine learning, control theory and optimization. While control theory in the past has mainly focused on model based design the advent of large scale data sets raises the possibility to analyse dynamical systems on the basis of data rather than analytical models. From a machine learning perspective, one of the main challenges going forward is to tackle problems involving dynamical systems which are beyond static pattern recognition problems. In this talk, I will give an overview about different problems lying in this intersection of dynamical systems, learning and control that I have worked on in the past. In particular, I will discuss how to efficiently learn a linear dynamical system with stability guarantees and how to identify its topological equivalence class based on a single trajectory of correlated data.

Carolin Antos, Salma Kuhlmann
Coordinators of the Logic Colloquium