POLITECNICO DI TORINO

DISMA Dipartimento di Scienze Matematiche G. L. Lagrange

ECCELLENZA 2018 • 2022

Tuesday the 20 November 2018 at 10:00
Politecnico di Torino, DISMA, Aula Buzano (third floor)

Christian IKENMEYER

Senior Researcher, Max-Planck Institute for Informatics

Geometry, Computational Complexity, and Representation Theory

Dr Ada Boralevi introduces the seminar

Abstract

Decompositions of tensors are ubiquitous in many areas of the sciences, and tensor rank problems are solved with the help of computers on a daily basis. Of fundamental interest in computational linear algebra is the rank of the matrix multiplication tensor.

In this talk, Dr Ikenmeyer will discuss tensor decompositions and matrix multiplication from a geometric and representation theoretic perspective. Moreover, he will explain the connection to geometric complexity theory, which is an ambitious approach initiated by Mulmuley and Sohoni in 2001 to resolve the famous P vs NP problem.

Biography

Christian Ikenmeyer is interested in tensor decompositions, algebraic geometry, algebraic complexity theory, and algorithmic representation theory. He received his PhD in 2012 from Paderborn University, Germany, under the supervision of Prof. Peter Bürgisser. He was a visiting assistant professor at Texas A&M University working mainly on geometric questions for three years. He joined the Max Planck Institute for Informatics in Saarbrücken, Germany, in 2016 and he is a Senior Researcher there since 2017. He is currently visiting the Simons Institute for the Theory of Computing in Berkeley, USA, as a Research Fellow.