

Abstract

Oberwolfach Workshop:

Real Algebraic Geometry with a View toward Koopman Operator Methods

Dates:

12 Mar - 18 Mar 2023 (Code: 2311)

Organizers:

Didier Henrion, Toulouse
Salma Kuhlmann, Konstanz
Igor Mezic, Santa Barbara
Victor Vinnikov, Be'er Sheva

This workshop focuses on interactions between real algebraic geometry, operator theory, and optimization, with a particular emphasis on the interrelations with the Koopman operator approach to optimization and control. It is an outgrowth of three previous successful MFO workshops held in 2014, 2017, and 2020, themselves a continuation of a long series of MFO workshops on real algebraic geometry which started in 1984. The mathematical topics of interest include sum-of-squares representations of non-negative polynomials in commutative and non-commutative algebras and the dual problem of moments, including various applications, and the use of linear infinite dimensional methods in nonlinear dynamical systems.