

Abstract

Oberwolfach Workshop:

Tropical Geometry: new directions

Dates:

28 Apr - 4 May 2019 (Code: 1918)

Organizers:

Ilia Itenberg, Paris
Hannah Markwig, Tübingen
Grigory Mikhalkin, Genève
Eugenii Shustin, Tel Aviv

Tropical geometry has appeared in 2002 as a combination of several intrinsically intertwined techniques such as patchworking of real algebraic varieties, studying their amoebas and the so-called Maslov's dequantization of classical arithmetic operations. By now tropical geometry has greatly developed, and established itself to be useful not only in various areas of Mathematics, but also in other branches of science (in particular, in Economics and Physics). It has appeared as an ultimately successful approach to classical enumerative geometry, and up to date this direction remains very active and promising. New directions in tropical geometry include refined enumerative geometry, new connections to integrable systems, and the unexpected appearance of tropical curves in scaling limits of Abelian sandpile models. In addition, there are new developments in more traditional areas of tropical research, such as tropical moduli spaces, tropical homology and tropical correspondence theorems. Tropical phenomena continue to be discovered in surprisingly various contexts. For the further development of the area it becomes vital to collect developments, ideas, approaches and problems coming from different sides and linking to different subjects.