

Tropical Surfaces

Kristin Shaw

Freie Universität Berlin

Abstract:

"Smooth" tropical surfaces are 2 dimensional abstract tropical spaces of locally modelled on matroidal fans. There are many ways in which these spaces behave like non-singular varieties over a field. I will survey the main tools and invariants used to study tropical surfaces including intersection theory, Chow groups, (p, q) -homology. I will also explain the behavior of these invariants under two operations which can be used to construct tropical surfaces; modifications and summations. I will also explain show that tropical versions of classical formulae for surfaces (adjunction and Noether's formula) hold in certain cases.