

TROPICAL MATHEMATICS

A BRIEF AND VERY INCOMPLETE READING GUIDE

The titles below are not meant to be representative, but hopefully their combined bibliography will contain pointers to a representative sample and key words.

- (1) **math.CO/0408099** *Tropical Mathematics*, David Speyer, and Bernd Sturmfels. Notes from Sturmfels expository talk at PCMI, Summer 2004. Assumes no background.
- (2) Chapter 9 of Bernd Sturmfels, *Solving Polynomial equations*, CBMS Lecture notes. Assumes no background.
- (3) **math.AG/0306366**, *First steps in tropical geometry* Jürgen Richter-Gebert, Bernd Sturmfels, and Thorsten Theobald. Introduction, emphasizing polyhedral geometry aspects.
- (4) **math.AG/0304218** *The Tropical Grassmannian*, David Speyer, and Bernd Sturmfels. Includes basic results on tropical varieties, and some connections to biology.
- (5) **math.CO/0311370** *The Bergman complex of a matroid and phylogenetic trees*, Federico Ardila, and Carly Klivans. Connection to algebraic combinatorics.
- (6) **math.AG/0507563**. *Computing Tropical Varieties*, Tristram Bogart, Anders Jensen, David Speyer, Bernd Sturmfels, and Rekha Thomas. Computational results on tropical varieties.
- (7) **math.MG/0308254** *Tropical Convexity*, Mike Develin and Bernd Sturmfels. Polyhedral geometry connections.
- (8) **math.CO/0312114** *On the rank of a tropical matrix*, Mike Develin, Francisco Santos, and Bernd Sturmfels. Linear algebra connections.
- (9) **math.AG/0408311** *Non-archimedean amoebas and tropical varieties*, Manfred Einsiedler, Mikhail Kapranov, Douglas Lind. Basics of amoebas and tropical varieties, and dynamical systems connections.
- (10) **math.AG/0403015** *Amoebas of algebraic varieties and tropical geometry*, Grigory Mikhalkin. Survey paper by one of the first users of tropical methods in algebraic geometry.
- (11) **math.AG/0504392**. *The Caporaso-Harris formula and plane relative Gromov-Witten invariants in tropical geometry*, Andreas Gathmann, and Hannah Markwig. Refinements of Mikhalkin's work.
- (12) *Idempotent analysis*, Maslov, Samborskii, eds. Advances in Soviet Mathematics, Volume 13. Development in analysis.
- (13) **math.GT/0306055** *Boundary slopes and the logarithmic limit set*, Stephan Tillmann. Amoeba in topology.