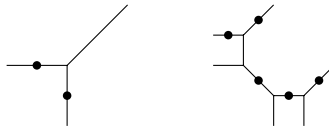


Enumerative geometry of tropical curves in \mathbb{R}^m

Abstract

Enumerative geometry deals with counting geometric objects with certain properties. Two typical examples: How many lines pass through two points in \mathbb{R}^2 ? How many algebraic curves of degree two intersect eight projective lines in \mathbb{P}^3 ? The answer to the first question is obviously one if the points are distinct; the answer to the second question is 92, if the eight lines are in general position.



In the talk, I will give an introduction to the enumerative geometry of tropical curves. A tropical curve in \mathbb{R}^m can be thought of as a graph in \mathbb{R}^m whose edges are (possibly unbounded) line segments with rational slopes fulfilling a so-called balancing condition at every vertex. The figure above shows the unique tropical line in \mathbb{R}^2 through the two given points (left) and the unique tropical curve of degree two in \mathbb{R}^2 through the five given points (right). I will show how one can enumerate tropical curves in \mathbb{R}^m .