NATHAN ILTEN, Simon Fraser University

Dual curves, Newton polygons, and tropicalization

Classical formulas of Plücker and Noether dictate how the degree of the projective dual C^* of a plane curve C depends on the degree of C and its singularities. In this talk, I will consider a more refined invariant: the Newton polygon. Given a polygon P and any sufficiently generic plane curve C with Newton polygon P, I will show how the Newton polygon of C^* can determined solely from the combinatorics of P. Our main tools are tropical geometry, and the notion of the projective dual of a tropical plane curve. This is joint work in progress with Yoav Len, Bernd Schober, and Kristin Shaw.