

DAY 1 PROBLEMS

Problem 1. Use subdivisions to classify smooth tropical quadrics.

Problem 2. Show that the tropical semi-ring $(\mathbb{R}, \min, +)$ is algebraically closed.

Problem 3. Use the balancing condition to prove a tropical version of Bezout's theorem.

Balancing Condition. A pure dimensional polyhedral complex with (positive, integer) weights m_σ on the top-dimensional cones is balanced if for each codimension 1 cell τ ,

$$\sum_{\sigma \supsetneq \tau} m_\sigma u_{\sigma/\tau} = 0$$

where $u_{\sigma/\tau}$ is the unique first lattice vector in the ray σ/τ .

Problem 4. Use tropical curves to compute $N_{0,3}$