SHIYUE LI, Brown University

Simple connectivity and intersection theory of moduli spaces of tropical weighted stable curves

Tropical moduli spaces of weighted stable curves are moduli spaces of metric weighted marked graphs satisfying certain stability conditions. I will present an inductive proof of the simple connectivity of these moduli spaces of curves of higher genus, which demonstrates the recursive structure of these symmetric Δ-complexes. I will then share with you a combinatorial result in tropical intersection theory on these moduli spaces; that is, a product decomposition formula of the weight of a maximal cone in an arbitrary-dimensional intersection of psi-classes into tropical Gromov-Witten multiplicities. This computation confirms the expectation that the classical and the tropical intersection numbers coincide in top-dimensional intersections, and provides a combinatorial perspective for arbitrary-dimensional intersections of psi-classes.