

Discrete Mathematics Seminar

Organizer(s): Bernd Sturmfels

Wednesday, 1:00–2:00pm, 939 Evans

Oct. 1 **Angelica Cueto**, UC Berkeley
Tropical mixtures of tree metrics

We characterize tree metrics that can be realized as tropical mixture of two star trees. The only trees admitting such a decomposition are the ones having only one internal edge and, moreover, certain relations among the weight assigned to the edges of each tree must hold. We also describe the fibers of the corresponding mixture map. This characterization seems to be the tropical analogue of Matsen-Steel's result for phylogenetic (convex) mixtures of trees of the same topological type. Moreover, in the star tree case, tropical mixtures can be interpreted as points in a tropical secant variety. We'll discuss this connection as well as possible generalizations to mixtures of non-star trees. No previous knowledge on tree metrics, phylogenetics or tropical geometry will be required.