Location:	BRNG 1255
Time:	Tue, February 6, 1:30 PM - 2:30 PM

Title: Gradient flows on totally nonnegative flag varieties

Abstract: One can view a flag variety in C^n as an adjoint orbit inside a Lie algebra. We use the orbit context to study the totally nonnegative part of a flag variety from an algebraic, geometric, and dynamical perspective. Motivated by previous work on the topology of totally nonnegative flag varieties, we classify gradient flows on adjoint orbits in various metrics which are compatible with total positivity. As applications, we show how the classical Toda flow fits into this framework, and study gradient flows on amplituhedra, generalizations of polytopes which arose in the physics of scattering amplitudes. This is joint work with Anthony Bloch.