

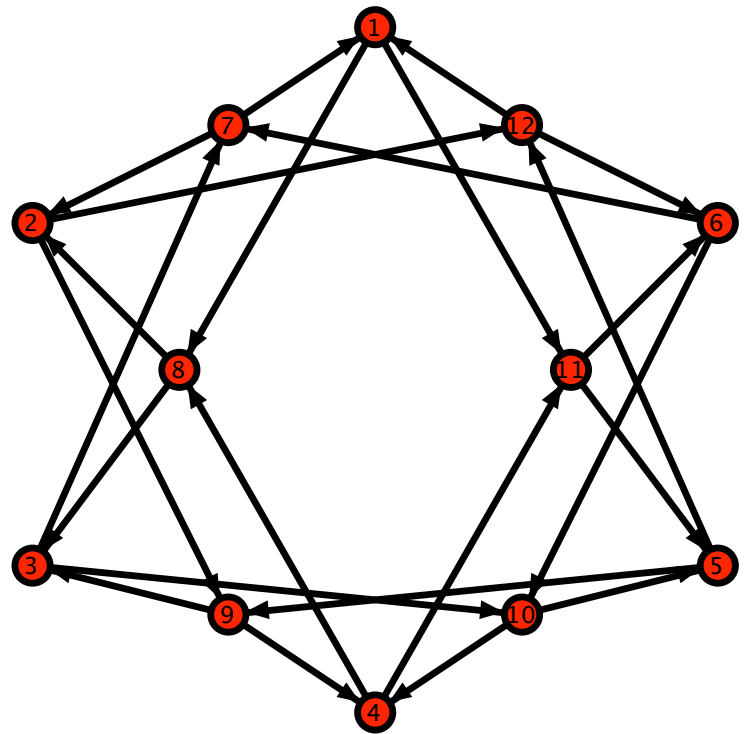
The Oliver Club

www.math.cornell.edu/~oliver/

Misha Gekhtman, University of Notre Dame

Discrete Integrable Systems and Cluster Algebras

The pentagram map associates to a projective polygon a new polygon formed by intersections of short diagonals; it was introduced by R. Schwartz and was shown to be integrable by V. Ovsienko, R. Schwartz and S. Tabachnikov. Recently, M. Glick demonstrated that the pentagram map can be put into the framework of the theory of cluster algebras, a new area with many exciting connections to diverse fields of mathematics. In this talk, I will explain what (discrete) integrable systems and cluster algebras are. Then, I will explain how integrable systems generalizing the pentagram map arise from a certain class of cluster algebras associated to networks on surfaces. I will show how all structures related to integrability can be recovered from combinatorics of a network and conclude with a geometric interpretation of the discrete systems obtained through this approach.



Thursday, October 13, 2011
at 4:00 PM in 532 Malott Hall

Refreshments will be served at 3:30 PM in the Mathematics Department lounge (532 Malott Hall).