

## **Cluster algebras and discrete integrable systems**

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In this talk we discuss planar network construction that allows us to reproduce some results for pentagram map. Introduced by R. Schwartz about 20 years ago, the pentagram map acts on plane  $n$ -gons by drawing the diagonals that connect secondnearest vertices and taking the new  $n$ -gon formed by their intersections. It was shown recently by R. Schwartz, V. Ovsienko, S. Tabachnikov that the pentagram map, in particular, is completely integrable. M. Glick showed relation between pentagram map and the theory of cluster algebras. We will discuss these results from the point of view of general theory of networks. We also will discuss generalizations of pentagram map. This is a joint project with M. Gekhtman, S. Tabachnikov, and A. Vainshtein.