1106-37-697 **Zijian Yao*** (zijian_yao@brown.edu), 7285 Brown University, Providence, RI 02912. *The point of collapse under pentagram maps.*

The pentagram map, introduced by Schwartz, has been studied recently in a series of papers. It maps a polygon in the projective plane to another one by taking intersections of successive 2-diagonals. Schwartz showed that an axis-aligned polygon collapses to a point under a predictable number of iterations of the pentagram map. Glick gave a different proof using cluster algebras, and conjectured that the point of collapse is always the center of mass of the axis-aligned polygon.

In this talk, we give a proof of Glick's conjecture, and generalize the statement to higher and lower dimensional pentagram maps. For the lower pentagram map, we define a new dynamical system – the mirror pentagram map – and show a closely related result. In addition, the mirror pentagram map provides a geometric description for the lower pentagram map, defined algebraically by Gekhtman, Shapiro, Tabachnikov and Vainshtein. (Received September 04, 2014)