1154-05-995 **Niklas Affolter**, **Max Glick*** (glick.107@osu.edu), **Pavlo Pylyavskyy** and **Sanjay Ramassamy**. *Vector-relation configurations and plabic graphs.*

We study a simple geometric model for local transformations of bipartite graphs. The state consists of a choice of a vector at each white vertex made in such a way that the vectors neighboring each black vertex satisfy a linear relation. Evolution for different choices of the graph coincides with many notable dynamical systems including the pentagram map, Q-nets, and discrete Darboux maps. On the other hand, for plabic graphs we prove unique extendability of a configuration from the boundary to the interior, an elegant illustration of the fact that Postnikov's boundary measurement map is invertible. In all cases there is a cluster algebra operating in the background, resolving the open question for Q-nets of whether such a structure exists. (Received September 12, 2019)