1135-57-91 **Erica L Sawyer*** (ericas1026@gmail.com), **Rita L Post** and **Abigayle L Dirdak**. *Virtual spatial trivalent graphs and braids.* Preliminary report.

A virtual spatial trivalent graph diagram (virtual STG diagram) is a trivalent graph immersed in a plane, which contains finitely many transverse double points, each of which has information of over/under or virtual crossings. We regard virtual STG diagrams as combinatorial objects up to an equivalence relation induced by certain combinatorial moves for virtual STG diagrams. Then a virtual spatial trivalent graph is the equivalence class of a virtual STG diagram.

A virtual trivalent braid is a braid similar to the notion of a classical braid, but may contain trivalent vertices and virtual crossings, in addition to classical crossings. The closure of a virtual trivalent braid with n endpoints on top and n endpoints on the bottom is a virtual STG diagram. Therefore, we can study virtual trivalent braids to gain information about virtual spatial trivalent graphs.

In this talk we describe our method for converting any virtual STG diagram into an equivalent diagram in braid form. We also provide conditions for having two virtual trivalent braids whose closures yield equivalent virtual STG diagrams. In other words, we provide Alexander- and Markov-type theorems for virtual spatial trivalent graphs and virtual trivalent braids. (Received July 25, 2017)