1116-57-1456 **Kelsey Renee Friesen*** (kelseyfriesen@mail.fresnostate.edu). *An Invariant for Virtual Singular Links.*

A singular link is an immersion of a disjoint union of circles into three-dimensional space that admits only finitely many singularities that are all transverse double points. A singular link diagram is a projection of a singular link into a plane, and contains two types of crossings, namely classical crossings and singular crossings.

Virtual knot theory, introduced by Lou Kauffman in 1996, can be regarded as a "projection" of classical knot theory in thickened surfaces. We take one step further by studying virtual singular links, which can be thought as immersions of disjoint unions of circles into thickened surfaces. Much as in the case of the classical and virtual knot theory, when studying virtual singular links we seek for ways to tell them apart. An invariant for a virtual singular link is a quantity associated to it, which is independent on the link diagram.

In this research, we employ a certain model for the sl(n) polynomial of classical links and extend it to a polynomial invariant for virtual singular links, which is defined as a state-sum formula. After this extension, we investigate how the polynomial behaves with respect to mirror images, disjoint unions, and compositions of virtual singular links. (Received September 19, 2015)