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**Jennifer Biermann\*** (jvbierma@lakeheadu.ca), **Christopher Francisco**, **Huy Tai Hà** and **Adam Van Tuyl**. *Colorings of simplicial complexes and vertex decomposability.*

In attempting to understand how combinatorial modifications alter algebraic properties of monomial ideals, several authors have investigated the process of adding “whiskers” to graphs. The first and the fourth authors developed a similar construction to build a vertex decomposable simplicial complex  $\Delta_\chi$  from a coloring  $\chi$  of the vertices of a simplicial complex  $\Delta$ . In this paper, we study this construction for colorings of subsets of the vertices. Using combinatorial topology, we strengthen and give new proofs for results of the second and third authors that were originally proven using algebraic techniques. (Received September 26, 2012)