1135-VP-2141 **Radmila Sazdanovic** and **Daniel Scofield***, dscofie@ncsu.edu. *Chromatic graph homology: structure and computations.*

Chromatic homology, introduced by Helme-Guizon and Rong, is a way of lifting the chromatic polynomial to a homology theory. Chromatic homology admits a long exact sequence as an analogue of the deletion-contraction formula, and the choice of algebra determines the number of colors. Chromatic homology over the algebra $\mathbb{Z}[x]/(x^2)$ is determined by the chromatic polynomial. However, over $\mathbb{Z}[x]/(x^3)$ chromatic homology is strictly stronger than the chromatic polynomial, and we show that it can also distinguish graphs with the same Tutte polynomial and cycle matroid. To provide insight into this phenomenon, we describe some of the structural properties of chromatic homology in terms of combinatorial data for graphs such as the cyclomatic number and the number of blocks. (Received September 25, 2017)