

Meeting: 1002, Pittsburgh, Pennsylvania, SS 8A, Special Session on Graph Polynomials

1002-05-187 **Yongwu Rong*** (rong@gwu.edu), Department of Mathematics, The George Washington University, Washington, DC 20052, and **Laure Helme-Guizon**. *A categorification for the chromatic polynomial.*

For each graph, we construct a graded homology theory whose Euler characteristic is the chromatic polynomial. This homology theory can be considered as a categorification for the chromatic polynomial. We prove a long exact sequence which can be considered as a categorification for the well-known deletion-contraction rule for the chromatic polynomial.

Our work is motivated by recent work of Khovanov, whose categorification for the Jones polynomial for knots has sparked a great deal of interests in low dimensional topology. (Received September 14, 2004)