1131-05-119 **Jacob A White*** (jacob.white@utrgv.edu). *Burnside Tutte invariants for Group-invariant hypergraphs.* Preliminary report.

We study group invariant hypergraphs, which generalize gain graphs and signed hypergraphs. In particular, we can define a notion of deletion and contraction, and hence a universal Tutte invariant. We show that some specializations can be viewed as polynomial endofunctions on the Burnside ring of a group. For ordinary hypergraphs we obtain the chromatic polynomial, and can obtain chromatic polynomials of gain graphs through other specializations. At the end of the talk, we will suggest a further generalization involving topos theory. (Received July 09, 2017)