## Algebra Seminar

## Generalized Orbifolds in Conformal Field Theory

## Marcel Bischoff Vanderbilt University

**Abstract:** I will introduce the notion of a finite hypergroup. It turns out that certain subfactors (unital inclusions of von Neumann algebras with trivial center) can naturally be seen as such a fixed point.

Chiral conformal field theory can be axiomatized as local conformal nets of von Neumann algebras. The orbifold of a conformal net is the fixed point with respect to a finite group of automorphisms. We define a generalized orbifold to be the fixed point of a conformal net under a proper hypergroup action. The fixed point is finite index subnet and it turns out that all finite index subnets are generalized orbifolds.

A holomorphic conformal net is a conformal net with trivial representation category. For example, every positive even self-dual lattice gives such a conformal net. The representation category of a generalized orbifold of a holomorphic net is the Drinfeld center of a categorification of the hypergroup.

Based on arXiv:1506.02606.

Tuesday, September 20, 2016, 4:00 pm Mathematics and Science Center: W306

MATHEMATICS AND COMPUTER SCIENCE EMORY UNIVERSITY