Topology Seminar

Chris Schommer-Pries

of Harvard University will be speaking on

Extensions of 2-Groups and a Finite Dimensional Model of the String Group

on September 14 at 4:30 in
MIT Room 2-131

The 6-connected cover of Spin(n), known as the group String(n), has fascinating connections with both abstract homotopy theory (through String Bordism and TMF) and with quantum field theory (through the 2D SUSY non-linear sigma model). A better geometric understanding of String geometry has the potential to offer new interactions between these fields. Unfortunately all previous models of String(n) are infinite dimensional, making a thorough geometric understanding elusive. In this talk we will construct a finite dimensional model of String(n) as a higher categorical version of a group (known as a 2-group). In the process, we will "categorify" the classical notions of group cohomology and derived functor. In particular we will categorify Segal's topological group cohomology, thereby obtaining a classification of extensions of topological 2-groups.