Topology Seminar

Nick Rozenblyum

of MIT will be speaking on

Connections on Conformal Blocks

on April 29 at 4:30 in
MIT Room 2-131

For an algebraic group G and a projective curve X, we study the category of D-modules on the moduli space Bun_G of principal G-bundles on X using ideas from conformal field theory. We describe this category in terms of the action of infinitesimal Hecke functors on the category of quasi-coherent sheaves on Bun_G. This family of functors, parametrized by the Ran space of X, act by averaging a quasi-coherent sheaf over infinitesimal modifications of G-bundles at prescribed points of X. We show that sheaves which are, in a certain sense, equivariant with respect to infinitesimal Hecke functors are exactly D-modules, i.e. quasi-coherent sheaves with a flat connection. This gives a description of flat connections on a quasi-coherent sheaf on Bun_G which is local on the Ran space.