

Northeastern University



Mathematics Department

Geometry, Physics, and Representation Theory Seminar

**Cris Negrón**

Massachusetts Institute of Technology

Thursday, February 14, 2:50-3:50 pm, Lake Hall 509

## **Log-modular quantum groups at even roots of unity**

### **Abstract**

I will discuss recent work on constructing small quantum groups—also known as Frobenius-Lusztig kernels—at even roots of unity. In particular, for any simple Lie algebra  $\mathfrak{g}$  and even order  $q$ , we would like to associate a corresponding finite-dimensional, factorizable, ribbon (i.e. log-modular) quasi-Hopf algebra. The main issue here is that, for  $\mathfrak{g} = \mathfrak{sl}_2$  at any even root of unity, for example, naive construction of such quantum groups produce finite tensor categories which admit no braidings. Our investigation is motivated by conjectural relations between non-rational vertex operator algebras and such log-modular quantum groups, which I will also discuss.