



Speaker: Alexander Shapiro
University of Notre Dame

Monday, September 26, 2016

4:00 PM

258 Hurley Hall

Title: Cluster structure on quantum groups

Abstract:

It was shown by Fock and Goncharov that moduli spaces of local systems on decorated surfaces provide examples of cluster varieties and thus admit canonical quantizations. I will describe a joint work with Gus Schrader where we embed the quantum group $U_q(\mathfrak{sl}(n))$ into the quantized moduli space of $SL(n)$ -local systems on a punctured disk with two marked points. This embedding endows the quantum group with a system of quantum cluster coordinates. It also allows us to realize the adjoint action of the R-matrix as a half Dehn twist of a twice punctured disk and factor it into a sequence of cluster mutations. If time permits, I will discuss applications of our construction to the representation theory.