

Speaker: Nick Rozenblyum

Title: String topology, noncommutative geometry and integrable systems

Abstract: A classical result of Goldman states that character variety of an oriented surface is a symplectic algebraic variety, and that the Goldman Lie algebra of free loops on the surface acts by Hamiltonian vector fields on the character variety. I will describe a vast generalization of these results, including to higher dimensional manifolds where the role of the Goldman Lie algebra is played by the Chas-Sullivan string bracket in the string topology of the manifold. These results follow from a general statement in noncommutative geometry. In addition to generalizing Goldman's result to string topology, we obtain a number of other interesting consequences including the universal Hitchin system on a Riemann surface. This is joint work with Chris Brav.