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Orbifold String Topology

In their seminal paper Chas and Sullivan introduced a new structure in the homology (and equivariant homology) of the free loop space of a smooth manifold. This structure behaves in many ways as a quantum field theory. For an algebraic topologist this has an expression as certain algebraic structures (BV-algebras, Lie algebras, operad actions). In this talk we will introduce the basic ideas in this field, and then explain our generalization (jointly with B. Uribe and M. Xicotencatl) to the case in which the manifold is replaced by an orbifold. An orbifold has an atlas which locally looks like an open set of euclidean space with the action of a finite group. Our generalization could be interpreted as an equivariant version of the theory.