

String and skein topology of oriented 3-manifolds

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Abstract

The skein (or quantum) topology of links in oriented 3-dimensional manifolds has been studied intensely during the last 15 years. But the precise relation of the "new" invariants with the classical geometric topology of 3-manifolds is still not fully understood. Recently Moira Chas and Dennis Sullivan discovered new interesting algebraic structures on the (equivariant) homology groups of the space of maps from a circle into the 3-manifold. These structures are defined from string interactions in the manifold and are motivated by the string theory in physics (a theory trying to unify quantum mechanics and general relativity theory). In the talk I will describe results concerning relations between the string topology of Chas-Sullivan and the skein topology of oriented 3-manifolds.