Topology of loop spaces

Johannes Huster

The talk presents some insight into the topology of loop spaces of manifolds and especially products and brackets defined on its homology. These are summarized under the notion of 'string topology'. The motivation for our interest comes from symplectic geometry and closely related holomorphic curve theory. We try to use the information of string topology to better understand compactifications of certain moduli spaces.

I try to motivate why 'string topology' may be considered as interesting by different branches of pure mathematics. After defining the stated operations I show how computations may be done. Here minimal differential graded algebras (due to D. Sullivan) allow to derive results at least for simply connected spaces. It depends a bit on time how detailed these concepts are outlined.