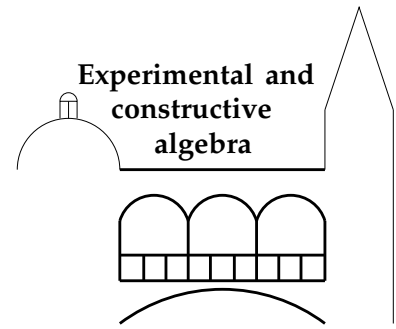


Graduiertenkolleg

Experimentelle und konstruktive Algebra



Kolloquiumsvortrag

Dienstag, 18. Juni 2019, 14:15 Uhr, Hörsaal WK (Raum 1230|001)

VERA NOBIS (LEHRSTUHL A FÜR MATHEMATIK):
Surface Measures on Path Spaces of Riemannian manifolds

In this talk I will present results to better understand a known definition of surface measures on path spaces of Riemannian manifolds, which are generated by a Brownian motion.

Let L be a closed Riemannian submanifold of the Riemannian manifold (M, g) . It turns out that conditioning Brownian motion on M , which starts in $x \in L$, to the event that the paths do not leave small tubular neighborhoods of the submanifold (up to a finite time horizon), gives a (weakly) convergent sequence of probability measures μ_ε^x .

The limit measure μ_0^x is equivalent to the Wiener measure \mathbb{W}_L on the path space Ω_L of L and the associated Radon-Nikodym density $\rho = \frac{d\mu_0^x}{d\mathbb{W}_L}$ depends on a smooth potential $W_0 \in C^\infty(L)$.

In the first part of the talk I will introduce the relevant quantities and give a formula for W_0 . Afterwards, I will discuss the potential for a totally geodesic embedding.

In the second part I will explain, which functions occur as a potential for such limit processes. As we will see, for any smooth function $\widetilde{W} \in C^\infty(L)$ on a given (closed) Riemannian manifold L , there exists an embedding into an ambient space, such that \widetilde{W} is exactly the potential.

Wir laden alle Interessierten herzlich ein.