

1052-60-101

Mang Wu* (mwu@math.uconn.edu), 196 Auditorium Road, Unit 3009, Storrs, CT 06269. *A Brownian motion on the group $\text{Diff}(S^1)$.*

The group $\text{Diff}(S^1)$ of orientation preserving C^∞ diffeomorphisms of S^1 has been extensively studied for a long time. One of the goals of research has been to construct and study the properties of Brownian motion with values in this group. Several authors (P. Malliavin 1999, S. Fang 2002, H. Airault and P. Malliavin 2006) have constructed Brownian motion with values in the group $\text{Homeo}(S^1)$, the group of homeomorphisms of S^1 , which is larger than the group $\text{Diff}(S^1)$. We will present another way to construct a Brownian motion with value in the group $\text{Diff}(S^1)$. Our method is to solve a stochastic differential equation in a sequence of Sobolev spaces. (Received August 23, 2009)