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**Mang Wu\*** ([mangwu@math.ucr.edu](mailto:mangwu@math.ucr.edu)), Department of Mathematics, University of California, Riverside, 900 University Ave, Riverside, CA 92521. *A Brownian Motion on the Group of Diffeomorphisms of the Circle.*

Let  $\text{Diff}(S^1)$  be the group of orientation preserving infinitely differentiable diffeomorphisms of the circle. The geometry on, and consequently the Brownian motion on the group  $\text{Diff}(S^1)$  has much to do with the metric on  $\text{Diff}(S^1)$ . In this talk, we first identify the group  $\text{Diff}(S^1)$  as a subset of a certain function space, and then give it a certain metric, and finally, we construct a Brownian motion that lives in the group  $\text{Diff}(S^1)$ . (Received September 17, 2010)