

1146-60-35

olav kallenberg* (kalleoh@auburn.edu), Department of Mathematics and Statistics, Parker Hall, auburn university, Auburn, AL AL 36849. *Stochastic Differential Geometry without Tears*.

Though Brownian motion and related SDEs on Riemannian manifolds and Lie groups have been studied by Itô and his followers since the late 1940's, semi-martingales in differential manifolds were not introduced until 1980 by Laurent Schwartz (famous creator of distribution theory), whose ideas were further developed by Meyer (1981/82), leading up to an almost algebraic theory of second order stochastic calculus, involving second order differential forms and a semi-heuristic 'Schwartz principle'. The present work arose from attempts to make probabilistic sense of the Schwartz-Meyer theory, by introducing some local characteristics of a semi-martingale in a manifold, describing the drift and diffusion rates of the process, where the former is given by a random tangent vector while the latter combine into a random contra-variant tensor. (My title is essentially a translation of those used by Meyer.) (Received December 14, 2018)