R. Leandre

Institut de Mathématiques. Faculté des Sciences
Université de Bourgogne. 21000. Dijon. FRANCE
E-mail address: Remi.leandre@u-bourgogne.fr

Stochastic Poisson-Sigma model.

Abstract: Cattaneo-Felder have given a formal path integral representation of Kontsevitch's formula of *-product on a Poisson manifold. We introduced a stochastic regulator in order to define rigorously some-thing similar of Cattaneo-Felder formula, and we perform the quasi-classical limit, in order to define a stochastic *-product. This procedure was done already by Klauder in order to define some path integral in quantum mechanic, by introducing some Gaussian regulator. In order to study the effect of the regulator, we define the Lebesgue measure in infinite dimension as a distribution. The hope is to get someting analoguous of stochastic quantization of Parisi-Wu, the role of the infinite dimensional Langevin equation being replaced by the infinite dimensional Brownian motion of Airault-Malliavin. We start by doing a small survey on random surfaces got by stochastic analysis.