Universidade Estadual de Campinas

Workshop in Stochastic Analysis and Applications

- August, 2018 -

Ciprian Tudor
SAMM, Université Paris 1 - France
Ciprian.Tudor@math.univ-lille1.fr

Asymptotic expansion for random vectors

Abstract

We develop the asymptotic expansion theory for vector-valued sequences F_N of random variables. We find the second-order term in the expansion of the density of F_N, based on assumptions in terms of the convergence of the Stein-Malliavin matrix associated to the sequence F_N . Our approach combines the classical Fourier approach and the recent theory on Stein method and Malliavin calculus. We find the second order term of the asymptotic expansion of the density of F_N and we illustrate our results by several examples.