

Viet Son Pham

Volterra-type tempo-spatial Ornstein-Uhlenbeck processes

Joint with Carsten Chong

We extend the class of Lévy-driven Ornstein-Uhlenbeck processes to time and space. This is achieved by employing techniques from the theory of stochastic Volterra integral equations driven by Lévy bases. We formulate conditions for the existence and uniqueness of the solution and derive an explicit solution formula. Furthermore, we discuss path properties and distributional properties such as stationarity conditions, the second-order structure of the resulting process and long memory criteria. The theoretical results are illustrated by concrete examples.