Abstract: "Interacting particle systems, nonlinear Markov processes and SDEs driven by nonlinear Levy noise"

We shall discuss general approaches to the analysis of the dynamics of interacting particle systems, their dynamic law of large numbers and the dynamic central limit for the fluctuations, stressing both analytic aspects (nonlinear Markov semigoups and processes) and probablistic (weak SDEs driven by nonlinear Levy noise). Recent developments include the application to stochastic control (e.g. mean field games) with various applications in economics and finances.