

**TITLE:**  
**SDEs and gradient flows**

**ABSTRACT:**

Arising from applications in machine learning such as the problem of approximate sampling from a given probability distribution, special types of stochastic processes such as McKean-Vlasov SDEs became highly attractive in recent years. The theory about them is quite interesting as it shows that in many ways they exhibit different characteristics than classical diffusion processes. In this talk, I will discuss the behaviour of interacting particle systems and their gradient flows. In particular, the focus will be on Wasserstein-Fisher-Rao gradient flows and deriving conditions which result in the convergence to the target measures. I will consider various approaches to the problem as well as numerical methods that can be used for simulations.