

Title: Path functions and homogenisation of superdiffusive fast- slow systems

Abstract: In this talk, I will present a framework for differential equations with jumps based on the notion of path functions. This notion allows one to keep track of movement that happens in infinitesimal time and turns out important in applications where convergence fails in classical Skorokhod spaces due to non-linear oscillations surviving over short time periods. As an application, I will show how homogenisation theorems of superdiffusive fast-slow systems can be stated and proved in this framework. Based on joint works with Peter Friz, Alexey Korepanov, and Ian Melbourne.