DIFFUSIONS WITH JUMPS

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Abstract

In the talk we consider a wide class of diffusions with jumps. The extreme points of this class are, on the one hand, homogeneous diffusion processes and, on the other hand, Poisson process with variable intensity. The diffusions with jumps have many good properties inherited both from classical diffusion processes and from Poisson ones. This class is closed with respect to a composition with the invertible twice continuously differentiable functions. A special random time change gives us again a diffusion with jumps. A result on transformation of the measure of the process analogous to Girsanov's transformation is valid for this class. There are effective results for the computation of distributions of certain functionals of diffusions with jumps.