ON FIRST-PASSAGE TIMES FOR ONE-DIMENSIONAL JUMP-DIFFUSION PROCESSES

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Abstract: Some problems of first-crossing times over two time-dependent boundaries for one-dimensional jump-diffusion processes are considered. The moments of the first-crossing times over each boundary are shown to be the solutions of certain partial differential-difference equations with suitable outer conditions. An approach based on the Laplace transform allows us to compare the moments of the first-crossing times of the jump-diffusion process with those of the corresponding simple-diffusion without jumps. For some examples where the boundaries are constant, the results are illustrated graphically.

THE FULL TEXT IS AVAILABLE HERE