Mathematics > Numerical Analysis

Computing Functionals of Multidimensional Diffusions via Monte Carlo Methods

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We discuss suitable classes of diffusion processes, for which functionals relevant to finance can be computed via Monte Carlo methods. In particular, we construct exact simulation schemes for processes from this class. However, should the finance problem under consideration require e.g. continuous monitoring of the processes, the simulation algorithm can easily be embedded in a multilevel Monte Carlo scheme. We choose to introduce the finance problems under the benchmark approach, and find that this approach allows us to exploit conveniently the analytical tractability of these diffusion processes.

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