Mathematics > Probability

Discretization error of Stochastic Integrals

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Asymptotic error distribution for approximation of a stochastic integral with respect to continuous semimartingale by Riemann sum with general stochastic partition is studied. Effective discretization schemes of which asymptotic conditional mean-squared error attains a lower bound are constructed. Two applications are given; efficient delta hedging strategies with transaction costs and effective discretization schemes for the Euler-Maruyama approximation are constructed.

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