

Double Barrier Option Pricing in Regime-Switching

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Abstract

We study a double barrier option pricing problem when the underlying asset price follows a new regime-switching exponential mean-reverting process. In this setting, the double barrier option prices satisfy a system of linear second order differential equations with boundary conditions. We numerically solve the system by constructing monotonic sequences of upper solutions and lower solutions that converge to true solutions, respectively. This method is tested by numerical examples and compared with Monte-Carlo method.