

The Dothan model revisited

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The Dothan model is a short term interest rate model based on geometric Brownian motion. In this talk we will present several computations of zero coupon bond prices in the Dothan model using both the PDE approach of heat kernels and Yor's representation formula for the law of the time integral of geometric Brownian motion. The formulas obtained for the price $P(t, T)$ at time $t > 0$ of a bond with maturity $T > 0$ complete those of the original paper by Dothan, which are shown not to always satisfy the boundary condition $P(T, T) = 1$.