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On Pricing Theory for Derivatives with Variable Volatility

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Abstract

We study some derivative models with variable volatility. First, we calculate the price of a zero coupon bond and a European call option on C・I・R model. Second, we review the pricing theory for Heston model. Last, we give a new model with a target zone as a generalization of C・I・R model. Furthermore, we investigate an approximation technique known as a perturbation method. This method can be applied to other problems.