

11:40-12:15 Kostiantyn Ralchenko (Taras Shevchenko National University of Kyiv, Ukraine)

Drift parameter estimation in CIR and CKLS models

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This talk is devoted to drift parameter estimation for diffusion models widely used in financial mathematics, especially in interest rate modeling. We focus on the Cox-Ingersoll-Ross model and its generalization, the CKLS model, using both continuous and discrete observations. We discuss two estimation approaches. The first is the classical maximum likelihood estimator, for which we establish strong consistency, convergence rates, and asymptotic normality. The second is an alternative estimator based on ergodic averages of the observed process. This estimator has a simpler structure and remains applicable under weaker assumptions, although the maximum likelihood estimator is more efficient when it is well defined. We also consider discretized versions of the estimators and extend the methodology to the CKLS model. The talk highlights the trade-off between statistical efficiency and robustness in drift estimation for nonlinear diffusion models.