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Nota di contenuto	Handbook of High-Frequency Trading and Modeling in Finance; Contents; Notes on Contributors; Editors; List of Contributors; Preface; 1 Trends and Trades; 1.1 Introduction; 1.2 A trend-based trading strategy; 1.2.1 signaling and trends; 1.2.2 gain over a subperiod; 1.3 CUSUM timing; 1.3.1 cusum process and stopping time; 1.3.2 a cusum timing scheme; 1.3.3 us treasury notes, cusum timing; 1.4 Example: Random walk on ticks; 1.4.1 random walk expected gain over a subperiod; 1.4.2 simple random walk, CUSUM timing; 1.4.3 lazy simple random walk, cusum timing; 1.5 CUSUM strategy Monte Carlo 1.6 The effect of the threshold parameter1.7 Conclusions and future work; Appendix: Tables; References; 2 Gaussian Inequalities and Tranche Sensitivities; 2.1 Introduction; 2.2 The tranche loss function; 2.3 A sensitivity identity; 2.4 Correlation sensitivities; Acknowledgment; References; 3 A Nonlinear Lead Lag Dependence Analysis of Energy Futures: Oil, Coal, and Natural Gas; 3.1 Introduction; 3.1.1 causality analysis; 3.2 Data; 3.3 Estimation techniques; 3.4 Results; 3.5 Discussion; 3.6 Conclusions; Acknowledgments; References; 4 Portfolio Optimization: Applications in Quantum Computing 4.1 Introduction4.2 Background; 4.2.1 Portfolios And Optimization; 4.2.2 Algorithmic Complexity; 4.2.3 Performance; 4.2.4 Ising Model;

4.2.5 Adiabatic Quantum Computing; 4.3 The models; 4.3.1 Financial Model; 4.3.2 Graph-Theoretic Combinatorial Optimization Models; 4.3.3 Ising And Qubo Models; 4.3.4 Mixed Models; 4.4 Methods; 4.4.1 Model Implementation; 4.4.2 Input Data; 4.4.3 Mean-Variance Calculations; 4.4.4 Implementing The Risk Measure; 4.4.5 Implementation Mapping; 4.5 Results; 4.5.1 The Simple Correlation Model; 4.5.2 The Restricted Minimum-Risk Model; 4.5.3 The WMIS Minimum-Risk, Max Return Model; 4.6 Discussion; 4.6.1 Hardware Limitations; 4.6.2 Model Limitations; 4.6.3 Implementation Limitations; 4.6.4 Future Research; 4.7 Conclusion; Acknowledgments; Appendix 4.A: WMIS Matlab Code; References; 5 Estimation Procedure for Regime Switching Stochastic Volatility Model and Its Applications; 5.1 Introduction; 5.1.1 the original motivation; 5.1.2 the model and the problem; 5.1.3 a brief historical note; 5.2 The methodology; 5.2.1 obtaining filtered empirical distributions at ; 5.2.2 obtaining the parameters of the markov chain; 5.3 Results obtained applying the model to real data; 5.3.1 part i: financial applications; 5.3.2 part ii: physical data application. temperature data; 5.3.3 part iii: analysis of seismometer readings during an earthquake; 5.3.4 analysis of the earthquake signal: beginning; 5.3.5 analysis: during the earthquake; 5.3.6 analysis: end of the earthquake signal, aftershocks; 5.4 Conclusion; Appendix 5.A: Theoretical results and empirical testing; 5.A.1 how does the particle filter work?; 5.A.2 theoretical results about convergence and parameter estimates; 5.A.3 markov chain parameter estimates; 5.A.4 empirical testing

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