Teme diplomskih radova

akademska godina 2022./2023.

1. **Monte Carlo Markovljavi lanci (dodijeljena tema)**
   Preporučena literatura:
   - Brooks, S., Gelman, A., Jones, G.L., Meng, X. (2011.) Handbook of Markov Chain Monte Carlo, Chapman & Hall/CRC, Boston
   - Holmes–Cerfon, M. (2019.) Applied Stochastic Analysis (web materijali: https://cims.nyu.edu/~holmes/teaching/asa2019.html#notes), New York University, Warren Weaver Hall
   - Robert, C.P., Casella, G. (2010.) Introducing Monte Carlo Methods with R, Springer
   - Gilks, W.R., Richardson, R., Spiegelhalter, D.J. (1996.) Markov Chain Monte Carlo in Practice, Springer
   - Graham, C. (2014.) Markov Chains – Analytic and Monte Carlo Computations, Wiley

2. **Skaliranje vremena u slučajnim procesima (Time-changed stochastic processes, dodijeljena tema)**
   Preporučena literatura:
   - Barndorff-Nielsen, O. E., Shiryaev, A. N. (2015.) *Change of time and change of measure* (Vol. 21), World Scientific Publishing Company
   - Swishchuk, A. (2016.) *Change of time methods in quantitative finance*, Springer International Publishing
   - Magdziarz, M., Weron, A., Weron, K. (2007.) *Fractional Fokker-Planck dynamics: Stochastic representation and computer simulation*, Physical Review E, 75(1), 016708

3. **Numeričko rješavanje stohastičkih diferencijalnih jednadžbi**
   Preporučena literatura:
   - Iacus, S.M. (2008.) *Simulation and Inference for Stochastic Differential Equations,* Springer
   - Iacus, S.M. (2011.) *Option pricing and estimation of financial models with R*, John Wiley & Sons Ltd.
   - Kloeden, P.E., Platen, E. (1992.) *Numerical Solution of Stochastic Differential Equations*, Springer
   - Kloeden, P.E., Platen, E., Schurz, H. (1994.) *Numerical Solution of SDE Through Computer Experiments*, Springer

4. **Pseudo-likelihood metode procjene parametara (dodijeljena tema)**
   Preporučena literatura:
   - Iacus, S.M. (2008.) *Simulation and Inference for Stochastic Differential Equations,* Springer
   - Guidom, A.C., Boukhetala, K. (2016.) *Estimation of Stochastic Differential Equations with Sim.DiffProc R Package*, https://cran.microsoft.com/snapshot/2016-06-17/web/packages/Sim.DiffProc/vignettes/FitSDE.pdf
   - Pedersen, A. R. (1995.) *A New Approach to Maximum Likelihood Estimation for Stochastic Differential Equations Based on Discrete Observations*, Scandinavian Journal of Statistics, 22(1), 55–71, http://www.jstor.org/stable/4616340

5. **Stratonovicheve stohastičke diferencijalne jednadžbe (dodijeljena tema)**
   Preporučena literatura:
   - Mikosch, T. (1998) *Elementary Stochastic Calculus With Finance in View*, World Scientific
   - Schilling, R.L., Partzsch, L. (2014) *Brownian Motion, An Introduction to Stochastic Processes*, De Gruyter

6. **Martingalne procjeniteljske funkcije**
   Preporučena literatura:
   - Sorensen, M. (2008) *Estimating Functions for Diffusion-type Processes*, Department of Mathematical Sciences, University of Copenhagen
   - Bibby, B.M., M. Sorensen, M. (1995) *Martingale estimation functions for discretely observed diffusion processes*, Bernoulli, 1(1-2), 17-39
   - Sorensen, M., Forman, J.L. (2008) *The Pearson Diffusions: A Class of Statistically Tractable Diffusion Processes*, Scandinavian Journal of Statistics, 35(3), 438-465