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Summer Term 2017

INSTITUTE OF MATHEMATICAL FINANCE

Prof. Dr. Robert Stelzer
Dirk Brandes

Seminar
Stochastic Simulation

The seminar is based on two books on stochastic simulation and Monte Carlo methods, namely Asmussen and Glynn [AG] and Graham and Talay [GT]. Be aware that there is just one copy of each book available in the library.

Time Schedule:

Date		Topic
24. April	1	**Strong Law of Large Numbers and Monte Carlo Methods:** [GT] §2.1, §2.3. → Lilit Avetisyan
8. May	2	**Non-asymptotic Error Estimates for Monte Carlo Methods:** [GT] §3.1 - §3.5. → Annika Schmidt
15. May	3	**Generating Random Objects:** [AG] §II. → Elena Kireeva
22. May	4	**Output Analysis:** [AG] §III. → Gevorg Adamyan
29. May	5	**Variance-Reduction Methods:** [AG] §V, §XIV.11. → Katrin Ruess
12. June	10	**Rare-Event Simulation - Part I:** [AG] §VI.1-§VI.3, §VI.5. → Mark Kiermayer

Date		Topic
12. June	11	**Rare-Event Simulation - Part II:** [AG] §VI.6-§VI.9. → Maximilian Authenrieth
19. June	12	**Stochastic Optimization:** [AG] §VIII. → Nikola Petrovic
26. June	13	**Gaussian Processes:** [AG] §XI. → Marcel Trick
3. July	15	**Markov Chain Monte Carlo Methods:** [AG] §XIII. → Philipp Lenzer
10. July	17	**Discrete-Space Markov Processes:** [GT] §5. → Felix Stickel
	18	**Continuous-Space Markov Processes with Jumps:** [GT] §6. → Ho Yeung Ling
17. July	7	**Discretization of Stochastic Differential Equations - Part I:** [GT] §7.1 - §7.4. → Bennet Ströh

References

[AG] Asmussen, S. and Glynn, P. W. (2007). *Stochastic Simulations: Algorithms and Analysis*, Springer, New York.

[GT] Graham, C. and Denis, T. (2013). *Stochastic Simulation and Monte Carlo Methods*, Springer, New York.