HAUSDORFF SCHOOL
FOR ADVANCED STUDIES
IN MATHEMATICS

UNIVERSITÄT BONN

Hausdorff School

"MCMC: Recent developments and new connections"

September 14 to 25, 2020

organized by
Nawaf Bou-Rabee and Andreas Eberle

- **Monday, September 14**

15:00 - 16:30	**Tutorials on MCMC methods and mathematical tools I**
17:00 - 18:30	**Tutorials on MCMC methods and mathematical tools II**
20:00 - 21:00	**Short presentations by participants**

- **Tuesday, September 15**

15:00 - 16:30	**Tutorials on MCMC methods and mathematical tools III**
17:00 - 18:00	**Short presentations by participants**
20:00 - 21:00	**Short presentations by participants**

- **Wednesday, September 16**

15:00 - 16:30	**Tutorials on MCMC methods and mathematical tools IV**
17:00 - 18:00	**Daniel Rudolf** *Spectral gap of slice sampling*
20:00 - 21:00	**Eric Moulines** *Variance reduction for MCMC algorithms*
21:00 - 22:00	**Ioannis Kontoyannis** *Variable-dimension MCMC samplers for variable-memory Markov models*

- **Thursday, September 17**

15:00 - 16:30	**Tutorials on MCMC methods and mathematical tools V**
17:00 - 18:00	**Manon Michel** *Using symmetries as an efficiency compass in MCMC*
20:00 - 21:00	**Alain Durmus** *Quantitative convergence of Unadjusted Langevin Monte Carlo and application to stochastic approximation*

21:00 - 22:00	**Joris Bierkens** *Spectral theory and asymptotic variance of piecewise deterministic samplers*

- **Friday, September 18**

15:00 - 16:30	**Tutorials on MCMC methods and mathematical tools VI**
17:00 - 18:00	**Jianfeng Lu** *Quantitative convergence analysis of hypocoercive sampling dynamics*
20:00 - 21:00	**Michela Ottobre** *Uniform in time approximations of stochastic dynamics*

- **Monday, September 21**

15:00 - 16:15	**Arnaud Doucet** *Differentiable Particle Filtering*
17:00 - 18:15	**Arnaud Doucet** *Controlled Sequential Monte Carlo*
20:00 - 21:15	**Aaron Smith** *Methods for Bounding MCMC Error: Recent Advances and Comparisons*

- **Tuesday, September 22**

15:00 - 16:15	**Jesus María Sanz Serna** *Numerical integrators for the Hamiltonian Monte Carlo method*
17:00 - 18:15	**Arnaud Doucet** *Unbiased Markov chain Monte Carlo*
20:00 - 21:15	**Aaron Smith** *Methods for Bounding MCMC Error: Recent Advances and Comparisons*

- **Wednesday, September 23**

15:00 - 16:15	**Francis Bach** *Optimization for machine learning*
17:00 - 18:15	**Tony Lelièvre** *Sampling problems in computational statistical physics*
20:00 - 21:15	**Jesus María Sanz Serna** *Numerical integrators for the Hamiltonian Monte Carlo method*

- **Thursday, September 24**

15:00 - 16:15	**Francis Bach** *Optimization for machine learning*
17:00 - 18:15	**Tony Lelièvre** *Sampling problems in computational statistical physics*
20:00 - 21:15	**Jesus María Sanz Serna** *Numerical integrators for the Hamiltonian Monte Carlo method*

- **Friday, September 25**

15:00 - 16:15	**Tony Lelièvre** *Sampling problems in computational statistical physics*
17:00 - 18:15	**Francis Bach** *Optimization for machine learning*
20:00 - 21:15	**Aaron Smith** *Methods for Bounding MCMC Error: Recent Advances and Comparisons*

All lectures take place via Zoom, all times are Central European Summer Time (CEST).