Monte Carlo and Quasi-Monte Carlo Methods – Abstract

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This special session will be focused on the following topics:

- Theory of Monte Carlo and quasi-Monte Carlo methods for evaluation of multidimensional integrals, solution of integral equations, and linear algebra problems;
- Optimization of Monte Carlo algorithms, including variance reduction and statistical error analysis;
- Numerical methods for solving stochastic differential equations (SDE) and stochastic partial differential equations (SPDE)
- Complexity and tractability of high- and infinite-dimensional problems in the randomized setting;
- Parallel implementations of Monte Carlo algorithms for computationally intensive problems.
- Monte Carlo methods for classical and quantum kinetic problems and applications to modern materials and nanostructures;