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Nota di contenuto	Part I Invited papers -- Multilevel Monte Carlo Implementation for SDEs driven by Truncated Stable Processes -- Construction of a Mean Square Error Adaptive Euler–Maruyama Method With Applications in Multilevel Monte Carlo -- Vandermonde Nets and Vandermonde Sequences -- Path Space Markov Chain Monte Carlo Methods in Computer Graphics -- Walsh Figure of Merit for Digital Nets: An Easy Measure for Higher Order Convergent QMC -- Some Results on the Complexity of Numerical Integration -- Approximate Bayesian Computation: A Survey on Recent Results -- Part II Contributed papers -- Multilevel Monte Carlo Simulation of Statistical Solutions to the Navier–Stokes Equations -- Unbiased Simulation of Distributions with Explicitly Known Integral Transforms -- Central Limit Theorem for Adaptive Multilevel Splitting Estimators in an Idealized Setting -- Comparison between LS-Sequences and -adic van der Corput Sequences -- Computational Higher Order Quasi-Monte Carlo Integration -- Numerical Computation of Multivariate Normal Probabilities using Bivariate Conditioning -- Non-nested Adaptive Timesteps in Multilevel Monte Carlo Computations -- On ANOVA Decompositions of Kernels and Gaussian Random Field Paths -- The Mean Square Quasi-Monte Carlo Error for

Digitally Shifted Digital Nets -- Uncertainty and Robustness in Weather Derivative Models -- Reliable Adaptive Cubature Using Digital Sequences -- Optimal Point Sets for Quasi-Monte Carlo Integration of Bivariate Periodic Functions with Bounded Mixed Derivatives -- Adaptive Multidimensional Integration Based on Rank-1 Lattices -- Path Space Filtering -- Tractability of Multivariate Integration in Hybrid Function Spaces -- Derivative-based Global Sensitivity Measures and Their Link with Sobol’ Sensitivity Indices -- Bernstein Numbers and Lower Bounds for the Monte Carlo Error -- A Note on the Importance of Weak Convergence Rates for SPDE Approximations in Multilevel Monte Carlo Schemes -- A Strategy for Parallel Implementations of Stochastic Lagrangian Simulation -- A New Rejection Sampling Method for Truncated Multivariate Gaussian Random Variables Restricted to Convex Sets -- Van der Corput and Golden Ratio Sequences Along the Hilbert Space-Filling Curve -- Uniform Weak Tractability of Weighted Integration -- Incremental Greedy Algorithm and Its Applications in Numerical Integration -- On “Upper Error Bounds for Quadrature Formulas on Function Classes” by K K Frolov -- Tractability of Function Approximation With Product Kernels -- Discrepancy Estimates for Acceptance-Rejection Samplers Using Stratied Inputs -- List of Participants -- Index.

Sommario/riassunto

This book presents the refereed proceedings of the Eleventh International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing that was held at the University of Leuven (Belgium) in April 2014. These biennial conferences are major events for Monte Carlo and quasi-Monte Carlo researchers. The proceedings include articles based on invited lectures as well as carefully selected contributed papers on all theoretical aspects and applications of Monte Carlo and quasi-Monte Carlo methods. Offering information on the latest developments in these very active areas, this book is an excellent reference resource for theoreticians and practitioners interested in solving high-dimensional computational problems, arising, in particular, in finance, statistics and computer graphics.