

Meeting on Modern Aspects of Analysis and Scientific Computing

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Abstract of Talk

QUASI MONTE-CARLO METHODS FOR HIGH-DIMENSIONAL INTEGRALS AND EXPECTATIONS

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We give an overview of modern quasi-Monte Carlo (QMC) methods to tackle high-dimensional integrals. Dimensions ranging from 3 up to thousands can be handled easily using quasi-Monte Carlo methods. We show modern QMC methods can show algebraic convergence of $O(N^{-1})$, $O(N^{-2})$ and $O(N^{-3})$ for practical problems, where even the constant can be independent of the number of dimensions. We finish by giving some pointers to software to construct (polynomial) lattice rules and to point generators for these point sets.