

# Exploitation of Sensitivity Derivatives via Scrambled Kronecker Sequences

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Monte Carlo methods are now widely used in solving various computational fluid dynamics systems. This paper presents a parallel quasi-Monte Carlo method for solving fluid dynamics applications from elliptic PDEs on irregular domains of higher dimensional spaces. In our parallel implementation we use independent scrambled Kronecker sequence for each processor. We explore the use of scrambled quasi-Monte Carlo to improve the accuracy for Monte Carlo schemes. We also present our numerical results for solving for two or higher dimensional large scale problems.