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Hybrid control variates-based simulation method for structural reliability analysis of some problems with low failure probability

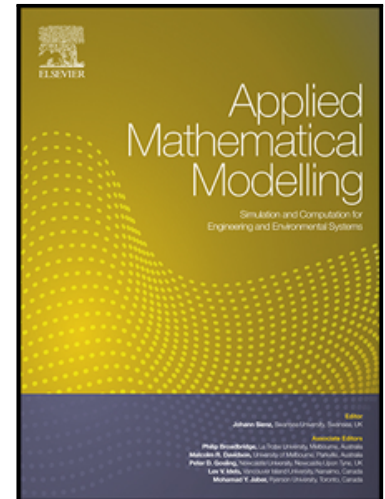
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Highlights

- Failure probability integral reformulated based on control variates technique
- Augmented probability density function used as control variate of the original probability density function
- Subset simulation computes roughed probability and a weighting term refines the roughness
- Markov Chain quickly transfers the conditional samples with high acceptance probability toward the failure set

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