

# Fast orthogonal transforms and generation of Brownian paths

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We present a couple of fast constructions of discrete Brownian paths that can be used as alternatives to principal component analysis and Brownian bridge for stratified Monte Carlo and quasi-Monte Carlo. By fast we mean that a path of length  $n$  can be generated in  $O(n \log(n))$  floating point operations.

We highlight some of the connections between the different constructions and we provide some numerical examples.