

# Normally Distributed Quasi-Random Samples Combining Box-Muller and Lattice Rules

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The Box-Muller transform is a well known method to generate bivariate normally distributed variables. When used in combination with LCGs there is a clearly visible spiral configuration. Such spirals appear when the input points are lattices.

We determine criteria for lattices such that the transformed points have a better bivariate normal distribution. These criteria are then used to select optimal lattice rules.