

# Transformation methods for the creation of non-uniformly distributed low-discrepancy sequences<sup>1</sup>

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## **Abstract**

We present and examine some algorithms for the creation of non-uniformly distributed sequences with a low discrepancy. While there are several well-understood methods to create uniformly distributed sequences, for non-uniformly distributed sequences in general only transformation methods are known. Most of them can not be directly applied to low-discrepancy point sets, or need the inverse distribution function.

We build on Hlawka and Mück's transformation techniques for low-discrepancy point sets and investigate several extensions to arbitrary distributions. Special emphasis is laid on the integration of singular integrands, a problem which was investigated in part already by Sobol and lately by Hartinger, Kainhofer, Predota and Tichy.

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