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This paper studies links between uniform pseudorandom sequences of real numbers in $[0,1)$ and pseudorandom binary sequences. It is proved that good pseudorandom $[0,1)$ sequences induce binary sequences that have small correlation and well-distribution measures. On the other hand, given a binary sequence with small combined well-distribution-correlation measure, it is shown how to construct a $[0,1)$ sequence with small discrepancy. The special cases of linear congruential pseudorandom sequences and of Legendre symbol sequences are analyzed in more detail.

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