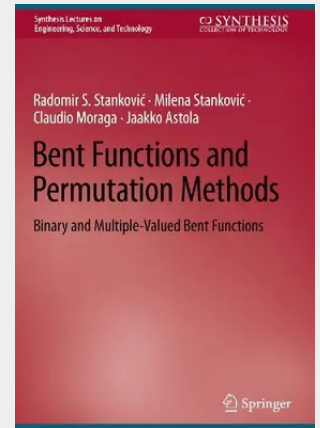


Bent Functions and Permutation Methods

This book discusses in a uniform way binary, ternary, and quaternary bent functions, while most of the existing books on bent functions refer to just binary bent functions. The authors describe the differences between binary and multiple-valued cases and the construction methods for bent functions are focused on the application of two types of permutation matrices. These matrices are derived from a class of differential operators on finite groups and Fast Fourier transform algorithms, respectively. The approach presented is based on the observation that given certain bent functions, many other bent functions can be constructed by manipulating them. Permutations are possible manipulations that are easy to implement. These permutations perform spectral invariant operations which ensure that they preserve bentness.

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