Construction of a New Class of Bent and Semi-bent Functions

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Abstract

Bent functions play an important role in the designing of S-boxes. These functions also have significant applications in coding theory, graph theory and sequence design. In the literature of bent functions their complete classification and characterization is still elusive, so the constructions and characterizations of bent functions are challenging problems. Many constructions methods and characterizations of bent functions are discussed in the literature. In this paper we obtain a new infinite class of bent and semi-bent functions using few Walsh transform values.

References


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Index Terms

Computer Science Applied Mathematics

Keywords

Boolean functions, Walsh-Hadamard transform, Bent functions, Semi-bent functions.