

ABSTRACT

A prototype system developed to convert a behavioral representation of a Boolean function in OBDD form into an initial structural representation is described and experimental results are given. The system produces a multilevel circuit using heuristic rules based on properties of a subset of spectral coefficients. Since the behavioral description is in OBDD form, efficient methods are used to quickly compute the small subset of spectral coefficients needed for the application of the heuristics. The heuristics guide subsequent decompositions of the OBDD, resulting in an iterative construction of the structural form. At each stage of the translation, the form of the decomposition is chosen in order to achieve optimization goals.