A Monte-Carlo Approach for the Estimation of Average Transition Probabilities in Sequential Logic Circuits

This paper presents an efficient and accurate Monte-Carlo approach to the problem of estimating average node switching probabilities in sequential circuits, which are used in average power estimation and reliability analysis of these circuits. Specific error bounds for the proposed estimation method are given at a certain level of confidence. This method is based on the analysis of paths in the State Transition Graph (STG) of the circuit and is validated by both theoretical analysis as well as experimental results.

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