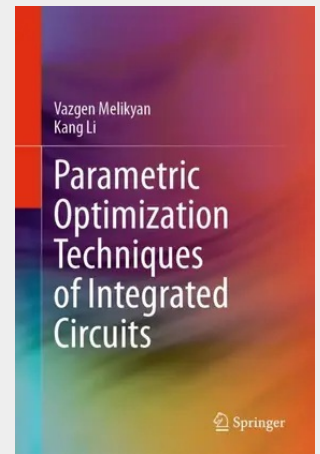


Parametric Optimization Techniques of Integrated Circuits

This book describes new principles, methods and techniques for parametric optimization of integrated circuits, considering the influence of secondary negative factors on the normal operation of circuit components, such as change of environmental conditions, parasitics, leakage currents, aging, etc. The efficiency of the methods discussed is demonstrated by examples of practical designs, enabling readers to use them in similar integrated circuit designs. The authors demonstrate newly developed principles and methods of transforming the given circuit and constraints into a single-objective or multi-objective optimization problem, applying swarm intelligence optimization algorithms and machine learning strategies, with the goal of finding the global minimum with the least number of simulations. The observed circuit types include but are not limited to analog, mixed-signal, high performance heterogeneous integrated circuits as well as digital cores.

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