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""Naive Bayes Classifier""""""MMLDE: Efficient Synthesis of Integrated Passive Components at High Frequencies""; ""Key Ideas of MMLDE""; ""Expected Improvement Prescreening""; ""The General Framework of MMLDE""; ""Experimental Results of MMLDE""; ""EMLDE: Efficient Synthesis of mm-Wave Linear Amplifiers""; ""Overview of EMLDE""; ""Key Algorithms in the EMLDE Method""; ""The Embedded SBDE Algorithm""; ""The EMLDE Method""; ""Experimental Verification of the EMLDE Method""; ""Example and Settings""; ""Example: Three-Stage Linear Amplifier Synthesis""; ""Conclusion""; ""References""
""Self-Healing Circuits Using Statistical Element Selection""""""Introduction""; ""Process Variations""; ""Systematic Variations""; ""Random Variations""; ""Mismatch Correction Methods""; ""Statistical Element Selection""; ""Basis""; ""Methodology ""; ""Comparator Array in 65nm Bulk CMOS Technology""; ""Design Architecture""; ""Testing Setup""; ""Measurement Results ""; ""An 8-bit 1.5-GHz Flash ADC in 65nm CMOS Process""; ""Flash ADC Architecture""; ""Comparator Design""; ""Measurement Results ""; ""Conclusion""; ""References""
""Improving Design Feature Reuse in Analog Circuit Design through Topological-Symbolic Comparison and Design Concept Combination""""""Introduction""; ""Related Work""; ""Circuit Synthesis Based on Concept Comparison and Combination""; ""Systematic Comparison of Analog Circuits""; ""Topological Matching""; ""Symbolic Matching""; ""Constraint Generation""; ""Performance Characterization ""; ""Experiments""; ""Conclusion""; ""References ""; ""Graph-Based Symbolic and Symbolic Sensitivity Analysis of Analog Integrated Circuits""; ""Introduction""; ""Nullor Circuit Equivalents""
""Graph-Based Determinant Representation""

Sommario/riassunto

Despite the fact that in the digital domain, designers can take full benefits of IPs and design automation tools to synthesize and design very complex systems, the analog designers’ task is still considered as a ‘handcraft’, cumbersome and very time consuming process. Thus, tremendous efforts are being deployed to develop new design methodologies in the analog/RF and mixed-signal domains. This book collects 16 state-of-the-art contributions devoted to the topic of systematic design of analog, RF and mixed signal circuits. Divided in the two parts Methodologies and Techniques recent theories, synthesis techniques and design methodologies, as well as new sizing approaches in the field of robust analog and mixed signal design automation are presented for researchers and R/D engineers. .