

Introduction to nonlinear circuits and networks

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Abstrak

This course-based text revisits classic concepts in nonlinear circuit theory from a very much introductory point of view: the presentation is completely self-contained and does not assume any prior knowledge of circuit theory. It is simply assumed that readers have taken a first-year undergraduate course in differential and integral calculus, along with an elementary physics course in classical mechanics and electrodynamics. Further, it discusses topics not typically found in standard textbooks, such as nonlinear operational amplifier circuits, nonlinear chaotic circuits and memristor networks. Each chapter includes a set of illustrative and worked examples, along with end-of-chapter exercises and lab exercises using the QUCS open-source circuit simulator. Solutions and other material are provided on the YouTube channel created for this book by the authors.