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	Altri autori (Persone)	Madero-AyoraMaria Jose BecerraJuan A
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	Nota di contenuto	Overview of nonlinear effects in wireless communication systems -- Volterra series approach -- Discrete-time Volterra models -- Volterra models pruning based on circuit knowledge -- Regression of Volterra models -- Sparse machine learning -- Transmitter linearization with digital predistorters.
	Sommario/riassunto	Thorough discussion of the theory and application of the Volterra series for impairments compensation in RF circuits and systems A Volterra Approach to Digital Predistortion: Sparse Identification and Estimation offers a comprehensive treatment of the Volterra series approach as a practical tool for the behavioral modeling and linearization of nonlinear wireless communication systems. Although several perspectives can be considered when analyzing nonlinear effects, this book focuses on the Volterra series to study systems with

real-valued continuous time RF signals as well as complex-valued discrete-time baseband signals in the digital signal processing field.   A unified framework provides the reader with in-depth understanding of the available Volterra-based behavioral models; in particular, the book emphasizes those models derived by exploiting the knowledge of the physical phenomena that produce different types of nonlinear distortion. From these distinctive standpoints, this work remarkably contributes to theoretical issues of behavioral modeling.   The book contributes to practical state-of-the-art questions on linearization, granting the reader practical guidance in designing digital predistortion schemes and adopting up-to-date machine learning methods to exploit the sparsity of the identification problem and reducing computational complexity.   Later chapters include information on: * Identification of Volterra-based models as a linear regression problem, allowing the adoption of sparse machine learning methods to reduce computational complexity while keeping rich model structures * Deduction of Volterra models based on circuit model knowledge, offering pruned model structures that are better fitted for specific scenarios * Wireless communication systems and the nonlinear effects produced by power amplifiers, mixers, frequency converters or IQ modulators * Digital predistortion schemes and experimental results for both indirect and direct learning architectures A Volterra Approach to Digital Predistortion: Sparse Identification and Estimation is an essential reference on the subject for engineers and technicians who develop new products for the linearization of wireless transmitters, as well as researchers and students in fields and programs of study related to wireless communications.