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Titolo	Analysis and identification of time-invariant systems, time-varying systems, and multi-delay systems using orthogonal hybrid functions [[electronic resource] ] : theory and algorithms with MATLAB® // by Anish Deb, Srimanti Roychoudhury, Gautam Sarkar
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2016
ISBN	3-319-26684-5
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (438 p.)
Collana	Studies in Systems, Decision and Control, , 2198-4182 ; ; 46
Disciplina	515.55
Soggetti	Computational intelligence Control engineering Computational complexity Computational Intelligence Control and Systems Theory Complexity
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Non-Sinusoidal Orthogonal Functions in Systems and Control -- Hybrid Function (HF) and Its Properties -- Function Approximation via Hybrid Functions -- Integration and Differentiation Using HF Domain Operational Matrices -- One-Shot Operational Matrices for Integration -- Solution of Linear Differential Equations -- Convolution of Time Functions -- Time Invariant System Analysis: State Space Approach -- Time Varying System Analysis: State Space Approach -- Multi-Delay System Analysis: State Space Approach -- Time Invariant System Analysis: Method of Convolution -- System Identification using State Space Approach: Time Invariant Systems -- System Identification using State Space Approach: Time Varying Systems -- Time Invariant System Identification: via 'Deconvolution' -- System Identification: Parameter Estimation of Transfer Function.
Sommario/riassunto	This book introduces a new set of orthogonal hybrid functions (HF)

which approximates time functions in a piecewise linear manner which is very suitable for practical applications. The book presents an analysis of different systems namely, time-invariant system, time-varying system, multi-delay systems---both homogeneous and non-homogeneous type- and the solutions are obtained in the form of discrete samples. The book also investigates system identification problems for many of the above systems. The book is spread over 15 chapters and contains 180 black and white figures, 18 colour figures, 85 tables and 56 illustrative examples. MATLAB codes for many such examples are included at the end of the book.

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