1. Record Nr. UNINA990008214960403321

Autore	Cornevin, Robert <1919-1988>
Titolo	Le Dahomey / par Robert Cornevin
Pubbl/distr/stampa	Paris : Presses Universitaires de France, 1965
Edizione	[2. éd.]
Descrizione fisica	128 p. ; 18 cm
Collana	Que sais-je? ; 1176
Locazione	ILFGE
Collocazione	J-07-044
Lingua di pubblicazione	Francese
Formato	Materiale a stampa
Livello bibliografico	Monografia

2. Record Nr. UNISALENTO991004185989707536

Autore	Cochin, Henry
Titolo	Bibliografia degli scritti di Francesco Novati : 1878-1908 / [Henry Cochin]
Pubbl/distr/stampa	Milano : Tip. Romitelli, 1909
Descrizione fisica	XXVIII, 79 p. ; 24 cm
Lingua di pubblicazione	Italiano
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Nome dell'A. dalla pref. - Ritr. dell'A. sull'antip.

3. Record Nr. UNINA9910830140203321

Autore	Lian Ryan Kuo-Lung
Titolo	Harmonic modeling of voltage source converters using simple numerical methods / / Ryan Kuo-Lung Lia, Ramadhani Kurniawan Subroto. Bing Hao Lin
Pubbl/distr/stampa	Hoboken, New Jersey : , : John Wiley & Sons, Incorporated, , [2021] ©2021
ISBN	1-119-52715-5 1-119-52719-8 1-119-52714-7
Descrizione fisica	1 online resource (419 pages)
Collana	IEEE Press.
Disciplina	621.3815322
Soggetti	Harmonics (Electric waves) - Mathematical models Electromagnetic interference - Mathematical models Electric power-plants - Equipment and supplies Electric current converters - Mathematical models Numerical analysis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover -- Title Page -- Copyright -- Contents -- Preface -- Acknowledgments -- Symbols -- Chapter 1 Fundamental Theory -- 1.1 Background -- 1.2 Definition of Harmonics -- 1.3 Fourier Series -- 1.3.1 Trigonometric Form -- 1.3.2 Phasor Form -- 1.3.3 Exponential Form -- 1.4 Waveform Symmetry -- 1.4.1 Even Symmetry -- 1.4.2 Odd Symmetry -- 1.4.3 HalfWave Symmetry -- 1.5 Phase Sequence of Harmonics -- 1.6 Frequency Domain and Harmonic Domain -- 1.7 Power Definitions -- 1.7.1 Average Power -- 1.7.2 Apparent and Reactive Power -- 1.8 Harmonic Indices -- 1.8.1 Total Harmonic Distortion (THD) -- 1.8.2 Total Demand Distortion (TDD) -- 1.8.3 True Power Factor -- 1.9 Detrimental Effects of Harmonics -- 1.9.1 Resonance -- 1.9.2 Misoperations of Meters and Relays -- 1.9.3 Harmonics Impact on Motors -- 1.9.4 Harmonics Impact on Transformers -- 1.10 Characteristic Harmonic and NonCharacteristic Harmonic -- 1.11 Harmonic Current Injection Method -- 1.12 Steady

State vs. Transient Response -- 1.13 SteadyState Modeling -- 1.14 LargeSignal Modeling vs. SmallSignal Modeling -- 1.15 Discussion of IEEE Standard (STD) 519 -- 1.16 Supraharmonics -- Chapter 2 Power Electronics Basics -- 2.1 Some Basics -- 2.2 Semiconductors vs. Wide Bandgap Semiconductors -- 2.3 Types of Static Switches -- 2.3.1 Uncontrolled Static Switch -- 2.3.2 SemiControllable Switches -- 2.3.3 Controlled Switch -- 2.4 Combination of Switches -- 2.5 Classification Based on Commutation Process -- 2.6 Voltage Source Converter vs. Current Source Converter -- Chapter 3 Basic Numerical Iterative Methods -- 3.1 Definition of Error -- 3.2 The Gauss-Seidel Method -- 3.3 PredictorCorrector -- 3.4 Newton's Method -- 3.4.1 Root Finding -- 3.4.2 Numerical Integration -- 3.4.3 Power Flow -- 3.4.4 Harmonic Power Flow -- 3.4.5 Shooting Method -- 3.4.6 Advantages of Newton's Method -- 3.4.7 QuasiNewton Method.
3.4.8 Limitation of Newton's Method -- 3.5 PSO -- Chapter 4 Matrix Exponential -- 4.1 Definition of Matrix Exponential -- 4.2 Evaluation of Matrix Exponential -- 4.2.1 Inverse Laplace Transform -- 4.2.2 Cayley-Hamilton Method -- 4.2.3 Padé Approximation -- 4.2.4 Scaling and Squaring -- 4.3 Krylov Subspace Method -- 4.4 Krylov Space Method with Restarting -- 4.5 Application of Augmented Matrix on DCDC Converters -- 4.6 Runge-Kutta Methods -- Chapter 5 Modeling of Voltage Source Converters -- 5.1 SinglePhase TwoLevel VSCs -- 5.1.1 Switching Functions -- 5.1.2 Switched Circuits -- 5.2 ThreePhase Two Level VSCs -- 5.3 ThreePhase Multilevel Voltage Source Converter -- 5.3.1 Multilevel PWM -- 5.3.2 Diode Clamped Multilevel VSCs -- 5.3.3 Flying Capacitor Multilevel VSCs -- 5.3.4 Cascaded MultiLevel VSCs -- 5.3.5 Modular MultiLevel VSC -- Chapter 6 Frequency Coupling Matrices -- 6.1 Construction of FCM in the Harmonic Domain -- 6.2 Construction of FCM in the Time Domain -- Chapter 7 General Control Approaches of a VSC -- 7.1 Reference Frame -- 7.1.1 Stationaryabc Frame -- 7.1.2 Stationary&lt -- 3:spiinlinemath 0:display&amp -- equals -- "inline" 0:overflow&amp -- equals -- "scroll" &gt -- Frame -- 7.1.3 Synchronous&lt -- 3:spiinlinemath 0:display&amp -- equals -- "inline" 0:overflow&amp -- equals -- "scroll" &gt -- dq Frame -- 7.1.4 PhaseLocked Loop -- 7.2 Control Strategies -- 7.2.1 VectorCurrent Controller -- 7.2.2 Direct Power Controller -- 7.2.3 DC bus Voltage Controller -- 7.2.4 Circulating Current Controller -- Chapter 8 Generalized SteadyState Solution Procedure for ClosedLoop Converter Systems -- 8.1 Introduction -- 8.2 Generalized Procedure -- 8.2.1 Step 1: Determine How and Where to Break the Loop -- 8.2.2 Step 2: Check if the Calculation Flows of the Broken System are Feasible.
8.2.3 Step 3: Determine What Domain of Each Component in the System Should be Modeled -- 8.2.4 Step 4: Formulate the Mismatch Equations -- 8.2.5 Step 5: Iterate to Find the Solution -- 8.3 Previously Proposed Methods Derived from the Proposed Solution Procedures -- 8.3.1 SteadyState Methods Derived from LoopBreaking 1 Method -- 8.3.2 SteadyState Methods Derived from LoopBreaking 2 Method -- 8.4 The LoopBreaking 3 Method -- Chapter 9 LoopBreaking 1 Method -- 9.1 A Typical TwoLevel VSC with AC Current Control and DC Voltage Control -- 9.2 LoopBreaking 1 Method for a TwoLevel VSC -- 9.2.1 Block 1 -- 9.2.2 Current Controller Block -- 9.2.3 Voltage Controller Block -- 9.3 Solution Flow Diagram -- 9.3.1 Initialization -- 9.3.2 Jacobian Matrix -- 9.3.3 Number of Modulating Voltage Harmonics to be Included -- Chapter 10 LoopBreaking 2 Method for Solving a VSC -- 10.1 Modeling for a ClosedLoop DCDC Converter -- 10.1.1 Model of the Buck Converter -- 10.1.2 Constraints of SteadyState -- 10.1.3 Switching Time Constraints -- 10.1.4 Solution Flow Diagram -- 10.2

TwoLevel VSC Modeling: OpenLoop Equations -- 10.2.1 SteadyState Constraints -- 10.2.2 Switching Time Constraints -- 10.2.3 Solution Flow Diagram -- 10.2.4 Initialization -- 10.2.5 Jacobian Matrix -- 10.3 Comparison Between the LB 1 and LB 2 Methods -- 10.3.1 Case #1: Balanced System -- 10.3.2 Case #2: Unbalanced System with AC Waveform Exhibiting HalfWave Symmetry -- 10.3.3 Case #3: Unbalanced System, No Waveform Symmetry -- 10.4 LargeSignal Modeling for LineCommutated Power Converter -- 10.4.1 Discontinuous Conduction Mode -- 10.4.2 Continuous Conduction Mode -- 10.4.3 SteadyState Constraint Equations -- 10.4.4 General Comments -- Chapter 11 LoopBreaking 3 Method -- 11.1 OpenDSS -- 11.2 Interfacing OpenDSS with MATLAB -- 11.3 Interfacing OpenDSS with Harmonic Models of VSCs.
Chapter 12 SmallSignal Harmonic Model of a VSC -- 12.1 Problem Statement -- 12.2 Gauss-Seidel LB 3 and Newton LB 3 -- 12.2.1 Current Injection Method -- 12.2.2 Norton Circuit Method -- 12.3 SmallSignal Analysis of DCDC Converter -- 12.4 SmallSignal Analysis of a TwoLevel VSC -- 12.4.1 Approach from Section 12.3 -- 12.4.2 Simpler Approach -- Chapter 13 Parameter Estimation for a Single VSC -- 13.1 Background on Parameter Estimation -- 13.2 Parameter Estimator Based on WhiteBoxandBlackBox Models -- 13.3 Estimation Validations -- 13.3.1 Experimental Validation -- 13.3.2 PSCAD/EMTDC Validation -- Chapter 14 Parameter Estimation for Multiple VSCs with Domain Adaptation -- 14.1 Introduction of Deep Learning -- 14.2 Domain Adaptation -- 14.3 Parameter Estimation for Multiple VSCs -- 14.4 Notations for DA -- 14.5 Supervised Domain Adaptation for Regression -- 14.6 Supervised Domain Adaptation for Classification -- 14.7 Test Setup -- 14.7.1 Data Generator -- 14.7.2 Data Preprocessing -- 14.8 Performance Metrics -- 14.8.1 R square (Regression) -- 14.8.2 Mean Absolute Percentage Error, MAPE (Regression) -- 14.8.3 Accuracy (Classification) -- 14.8.4 F1 score (Classification) -- 14.9 Test Results -- 14.9.1 Classification Task on Multiple VSC -- 14.9.2 Regression Task on Multiple VSC -- 14.10 Software for Running the Codes -- 14.11 Implementation of Domain Adaptation -- 14.11.1 Data Generation -- 14.11.2 Regression -- 14.11.3 Classification Network -- References -- Index -- EULA.

Sommario/riassunto

"The ac electric power systems are essentially designed to operate with sinusoidal voltages and currents at frequencies of 50 or 60 Hz. However, certain types of power components or loads produce currents and voltages with frequencies that are integer multiples of these frequencies (i.e. the fundamental frequencies). These higher frequencies are a form of electrical pollution known as power system harmonics. Power system harmonics are not a new phenomenon, and it is as old as the distribution of alternating current, which began in 1895-1896 [5]. It is reported that in 1893, Charles Proteus Steinmetz had worked on the problem of motor heating while working at Thomson-Houston [6]. After rigorous calculations and experimental validation, Steinmetz concluded that the problem was due to the resonance in the transmission circuit feeding the plant and a generator with a substantial amount of waveform distortion. Consequently, Steinmetz proposed two solutions to overcome this harmonic problem. The first was to reduce the system frequency to one-half of its original value. That is, to reduce the original frequency value of 125 Hz to a new value of 62.5 Hz. Note that at that time, most of the single-phase generator were operated at 125 Hz, 140 Hz or 1331"--