

1. Record Nr.	UNINA9910830895603321
Autore	Krause Paul C.
Titolo	Introduction to modern analysis of electric machines and drives / / Paul C. Krause, Thomas C. Krause
Pubbl/distr/stampa	Hoboken, New Jersey : , : John Wiley & Sons, Incorporated, , [2023] ©2023
ISBN	1-119-90835-3 1-119-90816-7 1-119-90817-5
Descrizione fisica	1 online resource (343 pages)
Collana	IEEE Press Series on Power and Energy Systems
Disciplina	343.730786
Soggetti	Electric machinery Electric driving
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 Page -- Contents -- Author Biography -- Foreword -- Preface -- Chapter 1 Common Analysis Tools -- 1.1 Introduction -- 1.2 Steady-State Phasor Calculations -- 1.2.1 Power and Reactive Power -- 1.3 Stationary Magnetically Linear Systems -- 1.3.1 Two-Winding Transformer -- 1.4 Winding Configurations -- 1.5 Two- and Three-Phase Stators -- 1.5.1 Two-Phase Stator -- 1.5.2 Three-Phase Stator -- 1.5.3 Line-to-Line Voltage -- 1.6 Problems -- Reference -- Chapter 2 Analysis of the Symmetrical Stator -- 2.1 Introduction -- 2.2 Tesla's Rotating Magnetic Field -- 2.2.1 Two-Pole Two-Phase Stator -- 2.2.2 Two-Pole Three-Phase Stator -- 2.3 Reference Frame Theory -- 2.3.1 Two-Phase Transformation -- 2.3.2 Three-Phase Transformation -- 2.4 Stator Voltage and Flux Linkage Equations in the Arbitrary Reference Frame and the Instantaneous Phasor -- 2.4.1 Two-Phase Stator -- 2.4.2 Three-Phase Stator -- 2.4.3 Instantaneous and Steady-State Phasors -- 2.5 Problems -- References -- Chapter 3 Symmetrical Induction Machine -- 3.1 Introduction -- 3.2 Symmetrical Machines -- 3.3 Symmetrical Two-Pole Rotor Windings -- 3.3.1 Two-Phase Rotor Windings -- 3.3.2 Three-Phase Rotor Windings -- 3.4 Substitute Variables For Symmetrical Rotating Circuits and

Equivalent Circuit -- 3.4.1 Two-Phase Machine -- 3.4.2 Three-Phase Machine -- 3.5 Electromagnetic Force and Torque -- 3.6 P-Pole Machines -- 3.7 Free Acceleration Variables Viewed from Different Reference Frames -- 3.8 Steady-State Equivalent Circuit -- 3.9 Problems -- References -- Chapter 4 Synchronous Machines -- 4.1 Introduction -- 4.2 Analysis of the Permanent-Magnet ac Motor -- 4.2.1 Torque -- 4.2.2 Unequal Direct- and Quadrature-Axis Inductances -- 4.2.3 Three-Phase Machine -- 4.3 Windings of the Synchronous Machine -- 4.4 Equivalent Circuit - Voltage and Torque Equations -- 4.4.1 Torque. 4.4.2 Rotor Angle -- 4.5 Dynamic and Steady-State Performances -- 4.6 Analysis of Steady-State Operation -- 4.7 Transient Stability -- 4.7.1 Three-Phase Fault -- 4.8 Problems -- Reference -- Chapter 5 Direct Current Machine and Drive -- 5.1 Introduction -- 5.2 Commutation -- 5.3 Voltage and Torque Equations -- 5.4 Permanent-Magnet dc Machine -- 5.5 DC Drive -- 5.5.1 Average-Value Time-Domain Block Diagram -- 5.5.2 Torque Control -- 5.6 Problems -- Reference -- Chapter 6 Brushless dc and Field-Oriented Drives -- 6.1 Introduction -- 6.2 The Brushless dc Drive Configuration -- 6.3 Normal Mode of Brushless dc Drive Operation -- 6.4 Other Modes of Brushless dc Drive Operation -- 6.4.1 Maximum-Torque Per Volt Operation of a Brushless dc Drive ($v = v_{MT} V$) -- 6.4.2 Maximum-Torque Per Ampere Operation of a Brushless dc Drive ($v = v_{MT} A$) -- 6.4.3 Torque Control -- 6.5 Field-Oriented Induction Motor Drive -- 6.6 Problems -- References -- Chapter 7 Single-Phase Induction Motors -- 7.1 Introduction -- 7.2 Symmetrical Components -- 7.3 Analysis of Unbalanced Modes of Operation -- 7.3.1 Unbalanced Stator Voltages -- 7.3.2 Unbalanced Stator Impedances -- 7.3.3 Open-Circuited Stator Phase -- 7.4 Single-Phase and Capacitor-Start Induction Motors -- 7.4.1 Single-Phase Induction Motor -- 7.4.2 Capacitor-Start Induction Motor -- 7.5 Dynamic and Steady-State Performance of a Capacitor-Start Single-Phase Induction Motor -- 7.6 Split-Phase Induction Motor -- 7.7 Problems -- References -- Chapter 8 Stepper Motors -- 8.1 Introduction -- 8.2 Basic Configurations of Multistack Variable-Reluctance Stepper Motors -- 8.3 Equations for Multistack Variable-Reluctance Stepper Motors -- 8.4 Operating Characteristics of Multistack Variable Reluctance Stepper Motors -- 8.5 Single-Stack Variable-Reluctance Stepper Motors -- 8.6 Basic Configuration of Permanent-Magnet Stepper Motors. 8.7 Equations for Permanent-Magnet Stepper Motors -- 8.8 Problems -- References -- Appendix A Abbreviations, Constants, Conversions, and Identities -- Epilogue -- Index -- EULA.

Sommario/riassunto

"The equations for the analysis of ac machines are established from Tesla's rotating magnetic field which contains the transformation for symmetrical two- and three-phase variables to the arbitrary reference frame. This allows the voltage and flux linkage equations to be expressed in any frame of reference by simply assigning the speed of the reference frame. The transformation is nothing more than a means of expressing the variables (voltages and currents) that portray Tesla's rotating magnetic field from a given reference frame. This establishes a meaning to the transformation and makes it easier to understand"--

2. Record Nr.	UNICAMPANIAVAN00290923
Autore	Björk, Jan-Erik
Titolo	Analytic D-Modules and Applications / by Jan-Erik Björk
Pubbl/distr/stampa	Dordrecht, : Springer, : Kluwer, 1993
Descrizione fisica	xiii, 581 p. : ill. ; 24 cm
Soggetti	14F10 - Differentials and other special sheaves; D-modules; Bernstein-Sato ideals and polynomials [MSC 2020] 16S32 - Rings of differential operators (associative algebraic aspects) [MSC 2020] 32-XX - Several complex variables and analytic spaces [MSC 2020] 32C38 - Sheaves of differential operators and their modules, $\mathcal{D}$ -modules [MSC 2020] 32S40 - Monodromy; relations with differential equations and $\mathcal{D}$ -modules (complex-analytic aspects) [MSC 2020] 35A27 - Microlocal methods and methods of sheaf theory and homological algebra applied to PDEs [MSC 2020] 58J15 - Relations of PDEs on manifolds with hyperfunctions [MSC 2020]
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia