

1. Record Nr.	UNINA9910299691803321
Autore	Asanbayev Valentin
Titolo	Alternating Current Multi-Circuit Electric Machines [[electronic resource] ] : A New Approach to the Steady-State Parameter Determination // by Valentin Asanbayev
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2015
ISBN	3-319-10109-9
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (920 p.)
Disciplina	004 620 621.381 621.3815
Soggetti	Electronics Microelectronics Electronic circuits Computer mathematics Electronics and Microelectronics, Instrumentation Circuits and Systems Computational Science and Engineering
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.
Nota di contenuto	Preface -- Chapter 1. Introduction -- Chapter 2. Fundamentals of the Field Decomposition Principle -- Chapter 3. The Specific System of Units: The EMF, Currents and Circuit-Loop Elements -- Chapter 4. The Magnetic Circuit Regions: The Magnetizing Reactances -- Chapter 5. The Cylindrical Magnetic Circuit Regions: The Magnetizing Reactances -- Chapter 6. The Magnetic Circuit Regions: The Magnetizing Reactances in Terms of the Curvature -- Chapter 7. The Passive and Active Conducting Layers: The Circuit-Loops -- Chapter 8. The Single - Winding Rotor Induction Machine Circuit-Loops: Weak Skin Effect -- Chapter 9. The Single-Cage Rotor: The Slot Leakage Circuit-Loops -- Chapter 10. The Single-Cage Rotor Ladder Networks: The Multi-Circuit-Loops -- Chapter 11. The Single-Cage Rotor Ladder Networks:

The Single-and Double-Circuit-Loops -- Chapter 12. The Double-Cage Rotor Circuit-Loops: Weak Skin Effect -- Chapter 13. The Double-Cage Rotor: The Slot Leakage Circuit-Loops -- Chapter 14. The Triple-Cage Rotor Circuit-Loops: Weak Skin Effect -- Chapter 15. The Triple-Cage Rotor: The Slot Leakage Circuit-Loops -- Chapter 16. The Slotted Solid Rotor Circuit-Loops: Weak Skin Effect -- Chapter 17. The Slotted Solid Rotor: The Leakage Circuit-Loops -- Chapter 18. The Squirrel-Cage Solid Rotor Circuit-Loops: Weak Skin Effect -- Chapter 19. The Squirrel-Cage Solid Rotor: The Leakage Circuit-Loops -- Chapter 20. The Solid Rotor with the Conducting Slot Wedges: The Circuit-Loops at the Weak Skin Effect -- Chapter 21. The Solid Rotor with the Conducting Slot Wedges: The Leakage Circuit-Loops -- Chapter 22. The Wound Solid Rotor Circuit-Loops: Weak Skin Effect -- Chapter 23. The Wound Solid Rotor: The Leakage Circuit-Loops.

---

### Sommario/riassunto

This book details an approach for realization of the field decomposition concept. The book presents the methods as well as techniques and procedures for establishing electric machine circuit-loops and determining their parameters. The methods developed have been realized using the models of machines with laminated and solid rotor having classical structure. The use of such models are well recognized and simplifies practical implementation of the obtained results. This book also:

- Includes methods for a construction of electric machine equivalent circuits that allows the replacement of the field models of the machine with simple circuit models
- Demonstrates the practical implementation of the proposed techniques and procedures
- Presents parameters of the circuit-loops in the form most convenient for practical implementation
- Uses methods based on machine models widely used in practice.

---