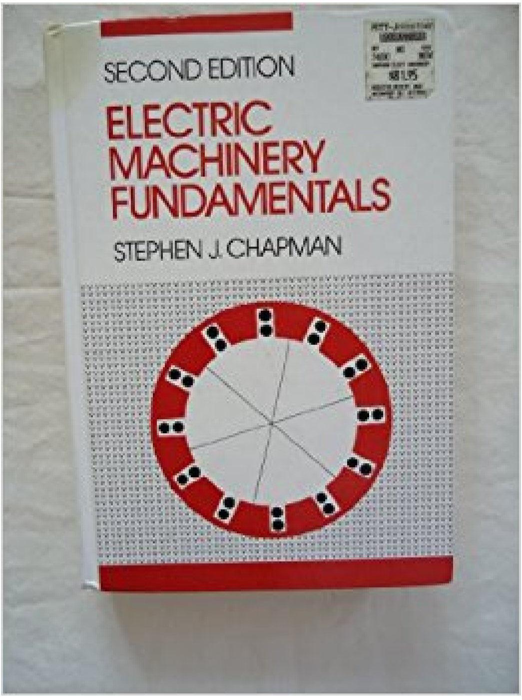
Electric Machinery Fundamentals (McGraw-Hill Series In Electrical Engineering)



Synopsis

This text is intended for courses in electrical machinery offered in departments of electrical engineering. It emphasizes a physical understanding of the cause-effect relationships in operations of machines. Among the features of this new edition are: expanded coverage of solid-state power electronics; new examples of solid-state ac and dc motor drive circuits; a new section on solid-state induction motor controls; and a new section on permanent magnet dc motors

Book Information

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Customer Reviews

As a textbook, for the first electrical machines course, the main advantages of this book are;1- Sufficient number of worked examples and chapter end problems. 2- Sufficient number of diagrams, well selected and helpful.The weaknesses1- The typing mistakes; I have pointed more than 50 of them appeared in the second edition and, repeated in the third edition.2- The graphical solutions are not drawn with `easy to follow’ scale, especially those with log or semilog-scale.

This is a straight forward, easy to understand book about three-phase electric systems and machinery. One of the best I have seen. Also, it is a great price. Another perk is that it appears that the author has put many electronic supplements (i.e. solution guide) to this book online. The author writes from a practical industry perspective. This is a great book.

This is a great teaching book on electric machines and is ideal for self study. However having answers to the end of chapters problems would have been great.

This book is a fundamental book in Electric Machines. I believe this book will keep its fundamental importance even one thousands years later!

The first five chapters of this book really suffice for a good intro to electric machines. Can't really say much negative at all except in chapter 7 in the section on the rotor circuit model. Here he uses an ad hoc claim that rotor circuit voltage is directly proportional to slip-true for any positive power of slip at locked rotor and sync, slip 1 and 0 respectively. Linearity totally unjustified. This is done to derive the proper slip dependent impedance. This impedance can be derived from the model and circuit theory taking motion into account with more work and this is valid but too difficult for a basic intro(actually by reference frame arguments the voltage too has a dependence on slip-nonlinear-and is not the constant locked rotor voltage-computer simulation needed). Forgivable considering the scope and intended audience-the claim just comes across as a plausibility which will lead to the slip having the right power-it's an approximation that most if not all use in circuit model estimates. Nevertheless it deserves a 5-star particularly for chapter 2 on transformers and chapter 4 on ac machinery. As an aside I'll give the justification for the author's ad hoc claim. In the transformer model which is what is used in chapter 7 to model the 3-phase induction motor, the rotor circuit corresponds to the secondary winding of the transformer. The voltage induced in the secondary winding of the transformer is proportional to the frequency of the field that moves through the winding (through the iron core)-justified in chapter 2. This is a fixed or stationary winding with a varying magnetic field moving through it. Our rotor circuit must be viewed as stationary, i.e. we must find the frequency of the magnetic field as seen in the fixed rotor frame, this now looks like the secondary winding. Remembering the frequency of the magnetic field is essentially its angular speed (rotating field at constant speed), the frequency as seen in the fixed rotor frame is the field angular speed in this frame, which is the difference of the angular speeds (at a particular instant for the rotor!), but this is equivalent to slip times frequency of the magnetic field-you know where 2Pi goes. This then is slip times the secondary voltage. Q.E.D. His claim is now justified for the transformer model.

Good

I keep falling back to this book with motor concepts. I've had it for so many years now and couldn't imagine continuing without it!

The internet is the way to go for college text books. I like how you can sell them back when you are done.

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