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Power System Dynamics and Simulation

Abhijit Chakrabarti

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PREFACE

The rapid growth of electric power system since the Second World War is evident from rise in demand of electrical energy in industrial, domestic, commercial and transportation sectors. While the basic aspect of power system engineering is well understood, its application in large networks presents major challenges in establishing a sound and simple analytical procedure, and in formulating a quantitative measure of security of operation and adequate operating margin. An electric power system, even a small one, usually constitutes an electric network of vast complexity. The diversity of system magnitude being great, there is no general rule regarding the structure of the system. The present day power systems operating as interconnected grid networks though offer several advantages, they make the system more complex. The management and control of a modern power system is a complex process, and it requires careful design and operation strategy.

The fundamental aim of this book is to present a comprehensive treatise in order to study the dynamics and simulation of the power networks. The topics substantiated by suitable illustrations and computer methods describe analytical aspects of operation and characteristic of power system from the view point of steady state and dynamic condition. The text is self contained and thorough. It is intended for a one-year course for senior undergraduate students and postgraduate students in electrical engineering. Practising engineers and researchers will also find the book suitable for their use.

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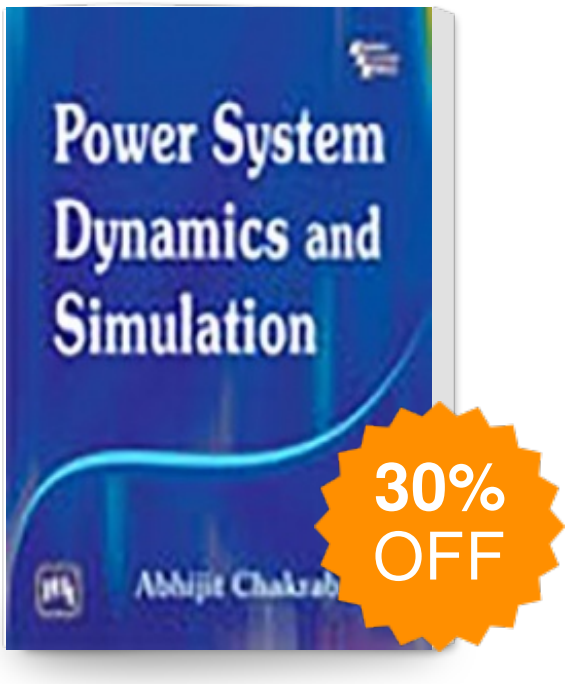

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