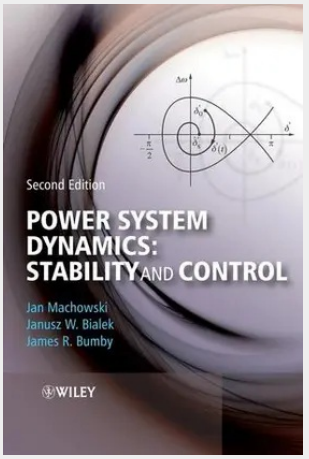
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Power System Dynamics

This book is the fully revised and updated second edition of Power System Dynamics and Stability published in 1997. The modified title Power System Dynamics: Stability and Control reflects a slight shift in focus from solely describing power system dynamics to the means of dealing with them. The book has been expanded by about a third to include: * a new chapter on wind power generation; * a new section on wide-area measurement systems (WAMS) and their application for real-time control; * an overview of lessons learned from wide-spread blackouts affecting North America and Europe in 2003, 2004 and 2006; * enhanced treatment of voltage stability and control, and frequency stability and control; * application of Lyapunov direct method to analyse and enhance stability of multi-machine power systems; * expanded coverage of steady-state stability using eigenvalue analysis, including modal analysis of dynamic equivalents. The book continues the successful approach of the first edition by progressing from simplicity to complexity. It places the emphasis first on understanding the underlying physical principles before proceeding to more complex models and algorithms. The reader will appreciate the authors' accessible approach as the book is illustrated by over 400 diagrams and a large number of examples. Power System Dynamics: Stability and Control, Second Edition is an essential resource for graduates of electrical engineering. It is also a clear and comprehensive reference text for undergraduate students, and for practising engineers and researchers who are working in electricity companies or in the development of power system technologies.

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