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Nota di contenuto	Introduction -- The Nature of Power System Oscillations -- Modal Analysis of Power Systems -- Modal Analysis for Control -- Power System Structure and Oscillations -- Generator Controls -- Power System Stabilizers -- Power System Stabilizers Problems and Solutions -- Robust Control -- Damping by Electronic Power System Devices -- Wide-Area Measurement Systems -- Modal Analysis in the Context of Wide-Area Measurement Systems -- Wide-Area Control of Power System Oscillations -- Forced Oscillations -- Oscillations in Low-Inertia Power Systems -- Appendix 1: Model Data Formats and Block Diagrams -- Appendix 2: Equal Eigenvalues.

Since the publication of the first edition of this book, wide-area measurement systems (WAMS) have transformed the way that power system oscillations are monitored and studied. These systems consist of networks of time-synchronized sensors distributed over wide geographic areas—enabling new approaches not only for situational awareness but also for power system control. This fully revised and expanded edition discusses the core ideas behind WAMS, real-time situational awareness, and wide-area control as they pertain to power system oscillations. Major technological advancements since the first edition's release are covered in five new chapters. This new material highlights a first-of-its-kind demonstration project in which a 3.1 GW high-voltage direct current transmission line was used to damp inter-area oscillations in a large interconnection. It also discusses oscillations in systems dominated by inverter-based generation, including forced oscillations, which arise not from resonances but exogenous system inputs. The book includes many worked examples throughout the text using the Power System Toolbox with MATLAB, allowing readers to analyze and/or reproduce every example independently. Power System Oscillations, Second Edition, will be a valuable reference for practicing power system engineers working in the electric utility industry. Professors, students, and research scientists studying power system dynamics will also find it to be a welcomed reference text. Provides a foundation in the theory of electromechanical oscillations; Covers the fundamentals of wide-area measurement systems (WAMS); Includes MATLAB-based software and scripts.
