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Titolo	PowerFactory Applications for Power System Analysis / / edited by Francisco M. Gonzalez-Longatt, José Luis Rueda
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ISBN	3-319-12958-9
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Descrizione fisica	1 online resource (496 p.)
Collana	Power Systems, , 1612-1287
Disciplina	621.31
Soggetti	Computer simulation Computer science - Mathematics Energy systems Simulation and Modeling Computational Science and Engineering Energy Systems
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Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Load Flow Calculation and its Application -- Modelling of Transmission Systems under Unsymmetrical Conditions and contingency analysis using DIgSILENT PowerFactory -- Probabilistic load flow module for PowerFactory -- Unbalanced Power Flow in Distribution Systems using TRX Matrix: Implementation using DIgSILENT Programming Language -- Primal-dual interior point algorithm applied to DC optimal power flow using DIgSILENT Programming Language -- Indices to Assess the Integration of Renewable Energy Resources on Standard Test Networks through DIgSILENT's Programming Language -- Modelling of automatic generation control in power systems -- Gas Turbine Modelling for Power System Dynamic Simulation Studies -- Implementation of Simplified Models of DFG-Based Wind Turbines for RMS-Type Simulation in DIgSILENT Power Factory -- Parameterized modal analysis using DIgSILENT Programming Language.
Sommario/riassunto	This book presents a comprehensive set of guidelines and applications of DIgSILENT PowerFactory, an advanced power system simulation software package, for different types of power systems studies. Written

by specialists in the field, it combines expertise and years of experience in the use of DIgSILENT PowerFactory with a deep understanding of power systems analysis. These complementary approaches therefore provide a fresh perspective on how to model, simulate and analyse power systems. It presents methodological approaches for modelling of system components, including both classical and non-conventional devices used in generation, transmission and distribution systems, discussing relevant assumptions and implications on performance assessment. This background is complemented with several guidelines for advanced use of DSL and DPL languages as well as for interfacing with other software packages, which is of great value for creating and performing different types of steady-state and dynamic performance simulation analysis. All employed test case studies are provided as supporting material to the reader to ease recreation of all examples presented in the book as well as to facilitate their use in other cases related to planning and operation studies. Providing an invaluable resource for the formal instruction of power system undergraduate/postgraduate students, this book is also a useful reference for engineers working in power system operation and planning.