1. Record Nr. UNINA9910495157803321

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Titolo	Introduction to transients in electrical circuits : analytical and digital solution using an EMTP-based software / / Jose Carlos Goulart de Siqueira, Benedito Donizeti Bonatto
Pubbl/distr/stampa	Cham, Swizterland, : Springer, 2021
ISBN	3-030-68249-8
Descrizione fisica	1 online resource
Collana	Power Systems, , 1860-4676
Disciplina	621.319/21
Soggetti	Transients (Electricity) Electric circuit analysis Electric circuits Regime transitoire (Electricite) Circuits electriques - Analyse Circuits electriques circuits
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction to Transients in Electrical Circuits's Physical phenomena and the Need for Mathematical Modeling and Simulation -- Singular Functions for the Analytical Solution -- Differential Equations -- Transients in First Order Circuits -- Digital Solution of Transients in Basic Electrical Circuits -- Transients in Circuits of Any Order -- Switching Transients Using Injection of Sources.
Sommario/riassunto	This book integrates analytical and digital solutions through Alternative Transients Program (ATP) software, recognized for its use all over the world in academia and in the electric power industry, utilizing a didactic approach appropriate for graduate students and industry professionals alike. This book presents an approach to solving singular-function differential equations representing the transient and steady-state dynamics of a circuit in a structured manner, and without the need for physical reasoning to set initial conditions to zero plus (0+). It also provides, for each problem presented, the exact analytical solution as well as the corresponding digital solution through a

computer program based on the Electromagnetics Transients Program (EMTP). Of interest to undergraduate and graduate students, as well as industry practitioners, this book fills the gap between classic works in the field of electrical circuits and more advanced works in the field of transients in electrical power systems, facilitating a full understanding of digital and analytical modeling and solution of transients in basic circuits.