1. Record Nr. UNINA9910410019803321 Autore de Andrade Flávia Titolo Basic Tutorial on Simulation of Microgrids Control Using MATLAB® & Simulink® Software / / by Flávia de Andrade, Miguel Castilla, Benedito Donizeti Bonatto Cham:,: Springer International Publishing:,: Imprint: Springer,, Pubbl/distr/stampa 2020 3-030-43013-8 ISBN Edizione [1st ed. 2020.] 1 online resource (XIII, 55 p. 60 illus., 59 illus. in color.) Descrizione fisica Collana SpringerBriefs in Energy, , 2191-5520 Disciplina 621.317 Soggetti Energy systems Power electronics Automatic control **Energy Systems** Power Electronics, Electrical Machines and Networks Control and Systems Theory Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Introduction -- Operation Modes of a Microgrid -- Control Methods of Nota di contenuto Microgrids -- Case Studies: Modeling and Simulation -- Conclusion. Sommario/riassunto This book offers a detailed guide to the design and simulation of basic control methods applied to microgrids in various operating modes, using MATLAB® Simulink® software. It includes discussions on the performance of each configuration, as well as the advantages and limitations of the droop control method. The content is organised didactically, with a level of mathematical and scientific rigour suitable for undergraduate and graduate programmes, as well as for industry professionals. The use of MATLAB® Simulink® software facilitates the learning process with regard to modelling and simulating power

electronic converters at the interface of distributed energy resource (DER) systems. The book also features a wealth of illustrations, schematics, and simulation results. Given its scope, it will greatly benefit undergraduate and graduate students in the fields of electrical and electronics engineering, as well as professionals working in

microgrid design and implementation.