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Autore	Castan?er Luis
Titolo	Modelling photovoltaic systems using PSpice / / Luis Castan?er, Santiago Silvestre
Pubbl/distr/stampa	Chichester, England ; ; Hoboken, NJ, : J. Wiley, c2002 Chichester, England : , : John Wiley & Sons, Ltd, , [2002] ©2002
ISBN	9786610270224 9780470855546 0470855541 9780470845271 0470845279 9781280270222 1280270225 9780470855539 0470855533 9781601195784 1601195788
Descrizione fisica	1 online resource (378 p.)
Altri autori (Persone)	SilvestreSantiago
Disciplina	621.31/244
Soggetti	Photovoltaic power systems - Mathematical models Photovoltaic power systems - Computer simulation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	Modelling Photovoltaic Systems using PSpice®; Contents; Foreword; Preface; Acknowledgements; 1 Introduction to Photovoltaic Systems and PSpice; Summary; 1.1 The photovoltaic system; 1.2 Important definitions: irradiance and solar radiation; 1.3 Learning some PSpice basics; 1.4 Using PSpice subcircuits to simplify portability; 1.5 PSpice piecewise linear (PWL) sources and controlled voltage sources; 1.6 Standard AM1.5G spectrum of the sun; 1.7 Standard AM0 spectrum and comparison to black body radiation; 1.8 Energy input to the PV system: solar radiation availability; 1.9 Problems

1.10 References2 Spectral Response and Short-Circuit Current; Summary; 2.1 Introduction; 2.1.1 Absorption coefficient a(l); 2.1.2 Reflectance R(l); 2.2 Analytical solar cell model; 2.2.1 Short-circuit spectral current density; 2.2.2 Spectral photon flux; 2.2.3 Total short-circuit spectral current density and units; 2.3 PSpice model for the short-circuit spectral current density; 2.3.1 Absorption coefficient subcircuit; 2.3.2 Short-circuit current subcircuit model; 2.4 Short-circuit current; 2.5 Quantum efficiency (QE); 2.6 Spectral response (SR); 2.7 Dark current density
2.8 Effects of solar cell material2.9. Superposition; 2.10. DC sweep plots and I(v) solar cell characteristics; 2.11. Failing to fit to the ideal circuit model: series and shunt resistances and recombination terms; 2.12 Problems; 2.13 References; 3 Electrical Characteristics of the Solar Cell; Summary; 3.1 Ideal equivalent circuit; 3.2 PSpice model of the ideal solar cell; 3.3 Open circuit voltage; 3.4 Maximum power point; 3.5 Fill factor (FF) and power conversion efficiency (h); 3.6 Generalized model of a solar cell; 3.7 Generalized PSpice model of a solar cell
3.8 Effects of the series resistance on the short-circuit current and the open-circuit voltage3.9 Effect of the series resistance on the fill factor; 3.10 Effects of the shunt resistance; 3.11 Effects of the recombination diode; 3.12 Temperature effects; 3.13 Effects of space radiation; 3.14 Behavioural solar cell model; 3.15 Use of the behavioural model and PWL sources to simulate the response to a time series of irradiance and temperature; 3.15.1 Time units; 3.15.2 Variable units; 3.16 Problems; 3.17 References; 4 Solar Cell Arrays, PV Modules and PV Generators; Summary; 4.1 Introduction
4.2 Series connection of solar cells4.2.1 Association of identical solar cells; 4.2.2 Association of identical solar cells with different irradiance levels: hot spot problem; 4.2.3 Bypass diode in series strings of solar cells; 4.3 Shunt connection of solar cells; 4.3.1 Shadow effects; 4.4 The terrestrial PV module; 4.5 Conversion of the PV module standard characteristics to arbitrary irradiance and temperature values; 4.5.1 Transformation based in normalized variables (ISPRA method); 4.6 Behavioral PSpice model for a PV module
4.7 Hot spot problem in a PV module and safe operation area (SOA)

Sommario/riassunto

Photovoltaics, the direct conversion of light from the sun into electricity, is an increasingly important means of distributed power generation. The SPICE modelling tool is typically used in the development of electrical and electronic circuits. When applied to the modelling of PV systems it provides a means of understanding and evaluating the performance of solar cells and systems.The majority of books currently on the market are based around discussion of the solar cell as semiconductor devices rather than as a system to be modelled and applied to real-world problems. Castaner and Silves

2. Record Nr. UNINA9910970057303321

Titolo	Scaling methods / / Peter Dunn-Rankin ... [et al.]
Pubbl/distr/stampa	Mahwah, N.J., : Lawrence Erlbaum Associates, 2004
ISBN	1-282-32156-0 9786612321566 1-4106-1104-3
Edizione	[2nd ed.]
Descrizione fisica	1 online resource (276 p.)
Altri autori (Persone)	Dunn-RankinPeter
Disciplina	150/.28/7
Soggetti	Scale analysis (Psychology)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Rev. ed. of: Scaling methods / Peter Dunn-Rankin. 1983.
Nota di bibliografia	Includes bibliographical references (p. 221-227) and indexes.
Nota di contenuto	CONTENTS; PREFACE; PART I: FOUNDATIONS; PART II: UNIDIMENSIONAL METHODS; PART III: CLUSTERING; PART IV: MULTIDIMENSIONAL METHODS; APPENDIX A: Using a Computer to Solve Problems; APPENDIX B: Tables; REFERENCES; AUTHOR INDEX; SUBJECT INDEX; MAP OF SCALING METHODOLOGY
Sommario/riassunto	Scaling Methods is written for professionals in the behavioral sciences who analyze data that results from subjective responses. Other books on scaling attitudes or measuring perceptions focus on the psychometrician's view of measurement. This book focuses on the users' view by concentrating on effective ways to analyze data rather than the mathematical details of how each program works. The methods included handle the majority of data analysis problems encountered and are accompanied by a software solution. Each chapter features the theory surrounding that methodology, an example, a re