Record Nr.	UNINA9910337590703321
Autore	Karathanasis Stavros
Titolo	Linear Fresnel Reflector Systems for Solar Radiation Concentration : Theoretical Analysis, Mathematical Formulation and Parameters' Computation using MATLAB / / by Stavros Karathanasis
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	3-030-05279-6
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (364 pages) : illustrations
Disciplina	551.5271
Soggetti	Renewable energy resources
	Computer mathematics
	Microwaves
	Optical engineering
	Lasers
	Photonics
	Renewable and Green Energy
	Computational Science and Engineering Microwaves, RF and Optical Engineering
	Optics, Lasers, Photonics, Optical Devices
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1. Concentration of Solar Radiation Chapter 2. Solar Radiation Chapter 3. Geometric Optics Chapter 4. Linear Fresnel Reflectors Systems Design Parameters Chapter 5. Geometric Optical Losses Chapter 6. Receiver Secondary Reflector Chapter 7. Design Parameters Chapter 8. Case Study – Fresnel Reflectors Solar Cookers Chapter 9. Short Introduction to MATLAB® Chapter 10. Applications.
Sommario/riassunto	This book offers a complete guide to designing Linear Fresnel Reflector Systems for concentrating solar radiation. It includes theoretical analyses, computational tools and mathematical formulae to facilitate the development, design, construction and application of these systems. In addition, the book presents a concise yet thorough

1.

treatment of the theory behind these systems, and provides useful and efficient calculation procedures that can be used to model and develop their practical applications. Along with the theoretical analyses provided in the book, the physical background is explained using mathematical formulae, illustrations, graphs and tables. Methods are presented for solving the non-linear mathematical systems that describe a significant variety of cases. In addition, MATLAB codes are supplied (both in the text and online). Consequently, readers interested in applying the methodology presented here will have all the source codes at hand, allowing them to easily expand on them by introducing appropriate modifications for their respective design configuration. Given its scope, the book will be of interest to engineers and researchers, who can use their scientific background to help them develop more energy-efficient Linear Fresnel Reflector systems. It will also appeal to students studying these systems for the first time, as it supplies a comprehensive overview of their theoretical analysis and applications. .