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Collana	Computational Modeling of Energy Systems, , 2570-1339
Disciplina	620
Soggetti	Renewable energy resources Thermodynamics Heat engineering Heat - Transmission Mass transfer Renewable and Green Energy Engineering Thermodynamics, Heat and Mass Transfer
Lingua di pubblicazione	Inglese
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Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Geothermal Energy -- Theory -- Numerical Methods -- Heat Transport Exercises -- Introduction to Geothermal Case Studies -- Symbols -- Keywords -- References.
Sommario/riassunto	Demonstrates how to model flow and heat transport processes in porous and fractured media related to geothermal energy applications Provides theoretical scientific background and suggestions for future applications Includes five step-by-step OpenGeoSys exercises, highlighting the most important geothermal computational areas, including heat diffusion, heat advection in porous and fractured media, and heat convection This introduction to geothermal modeling deals with flow and heat transport processes in porous and fractured media related to geothermal energy applications. Following background coverage of geothermal resources and utilization in several countries, the basics of continuum mechanics for heat transport processes, as well as numerical methods for solving underlying governing equations

are discussed. This examination forms the theoretical basis for five included step-by-step OpenGeoSys exercises, highlighting the most important computational areas within geothermal resource utilization, including heat diffusion, heat advection in porous and fractured media, and heat convection. The book concludes with an outlook on practical follow-up contributions investigating the numerical simulation of shallow and deep geothermal systems.
