1. Record Nr. UNISA996418201003316

Titolo	Mathematical modelling in real life problems : case studies from ECMI-Modelling Weeks / / Ewald Lindner, Alessandra Micheletti, Claudia Nunes, editors
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2020] Â©2020
ISBN	3-030-50388-7
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (VIII, 165 p. 60 illus., 55 illus. in color.)
Collana	Mathematics in industry, , 2198-3283 ; ; 33
Disciplina	511.8
Soggetti	Mathematical models Engineering mathematics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Inverse Problems in Diffuse Optical Tomography Applications -- 1D Models for Blood Flow in Arteries -- Uncertainty Quantificatio of Chemical Kinetic Reaction Rate Coefficients -- Nuclear Accidents: How Can Mathematicians Help to Save Lives? -- Drug Delivery from Ophthalmic Lenses -- The Zombie Invasion -- Optimal Heating of an Indoor Swimming Pool -- Some Basic Epidemic Models -- Mathematical Model for the Game Management Plan -- Efficient Parameter-Dependent Simulation of Infections in a Population Model -- Optimising a Cascade of Hydro-electric Power Stations -- Networks of Antennas: Power Optimization.
Sommario/riassunto	This book is intended to be a useful contribution for the modern teaching of applied mathematics, educating Industrial Mathematicians that will meet the growing demand for such experts. It covers many applications where mathematics play a fundamental role, from biology, telecommunications, medicine, physics, finance and industry. It is presented in such a way that can be useful in Modelation, Simulation and Optimization courses, targeting master and PhD students. Its content is based on many editions from the successful series of Modelling Weeks organized by the European Consortium of Mathematics in Industry (ECMI). Each chapter addresses a particular problem, and is written in a didactic way, providing the description of

the problem, the particular way of approaching it and the proposed solution, along with the results obtained.