

1. Record Nr.	UNISA996466555503316
Autore	Treibert Sarah Marie
Titolo	Mathematical Modelling and Nonstandard Schemes for the Corona Virus Pandemic [[electronic resource] /] / by Sarah Marie Treibert
Pubbl/distr/stampa	Wiesbaden : , : Springer Fachmedien Wiesbaden : , : Imprint : Springer Spektrum, , 2021
ISBN	9783658359324 9783658359317
Edizione	[1st ed. 2021.]
Descrizione fisica	1 online resource (260 pages)
Collana	BestMasters, , 2625-3615
Disciplina	362.1962414015118
Soggetti	Mathematics Applications of Mathematics Pandèmia de COVID-19, 2020- Models matemàtics Previsió Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction -- The Severe Acute Respiratory Syndrome Corona Virus Type 2 -- The SIR Model in Epidemic Modelling -- The SARS-CoV-2-fitted SEIR Model -- Model Specifications -- Parameter Estimation in MAT LAB -- Markov Chain Epidemic Models -- R´esum´.
Sommario/riassunto	This book deals with the prediction of possible future scenarios concerning the COVID-19 pandemic. Based on the well-known SIR model by Kermack and McKendrick a compartment model is established. This model comprises its own assumptions, transition rates and transmission dynamics, as well as a corresponding system of ordinary differential equations. Making use of numerical methods and a nonstandard-finite-difference scheme, two submodels are implemented in Matlab in order to make parameter estimations and compare different scenarios with each other. About the author Sarah Marie Treibert is a research assistant at the Chair of Applied Mathematics / Numerical Analysis of the University of Wuppertal (Bergische Universität Wuppertal). Her focus is on Epidemic Modelling.

