

1. Record Nr.	UNINA9910688476503321
Titolo	Recent Advances in Numerical Simulations // edited by Francisco Bulnes, Jan Peter Hessling
Pubbl/distr/stampa	London : , : IntechOpen, , 2021
Descrizione fisica	1 online resource (290 pages)
Disciplina	501.5118
Soggetti	Science - Mathematical models Mathematical models
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	A numerical simulation is a computing calculation following a program that develops a mathematical model for a physical, social, economic, or biological system. Numerical simulations are required for analyzing and studying the behavior of systems whose mathematical models are very complex, as in the case of nonlinear systems. Capturing the resulting uncertainty of models based on uncertain parameters and constraints in confidence intervals (1-D), or more generally (>1-D) confidence regions, is very common for expressing to which degree the computed result is believed to be consistent with possible values of the targeted observable. This book examines the different methods used in numerical simulations, including adaptive and stochastic methods as well as finite element analysis research. This work is accompanied by studies of confidence regions, often utilized to express the credibility of such calculations and simulations.