1.	Record Nr.	UNINA9910908363003321
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	Titolo	Basic Concepts of Global Optimization / / by Oliver Stein
	Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2024
	ISBN	9783662662403
		9783662662397
	Edizione	[1st ed. 2024.]
	Descrizione fisica	1 online resource (192 pages)
	Collana	Mathematics Study Resources, , 2731-3832 ; ; 5
	Disciplina	519.6
	Soggetti	Mathematical optimization
		Optimization
		Optimització matemàtica
		Llibres electrònics
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di contenuto	1 Introduction -- 2 Convex Optimization Problems -- 3 Nonconvex Optimization Problems.
	Sommario/riassunto	This textbook is an introduction to global optimization, which treats mathematical facts stringently on the one hand, but also motivates them in great detail and illustrates them with 80 figures. The book is therefore not only aimed at mathematicians, but also at natural scientists, engineers and economists who want to understand and apply mathematically sound methods in their field. With almost two hundred pages, the book provides enough choices to use it as a basis for differently designed lectures on global optimization. The detailed treatment of the global solvability of optimization problems under application-relevant conditions sets a new accent that enriches the stock of previous textbooks on optimization. Using the theory and algorithms of smooth convex optimization, the book illustrates that the global solution of a class of optimization problems frequently encountered in practice is efficiently possible, while for the more difficult-to-handle non-convex problems it develops in detail the ideas of branch-and-bound methods. The author Prof. Dr. Oliver Stein is a full professor at the Karlsruhe Institute of Technology, where he heads

the Continuous Optimization group at the Institute for Operations Research. His research focuses on the design and implementation of optimization methods and their theoretical foundations. His teaching focuses on global optimization, nonlinear optimization, mixed-integer optimization, convex analysis, parametric optimization, and multiobjective optimization. This book is the English translation of the 2nd edition of "Grundzüge der Globalen Optimierung" (Springer, 2021) written in German. The translation was done with the help of artificial intelligence. A subsequent revision was performed by the author to further refine the work and to ensure that the translation is appropriate concerning content and scientific correctness. It may, however, read stylistically different from a conventional translation.