1. Record Nr. UNINA9910806193003321

Autore	Kaveh A (Ali), <1948->
Titolo	Chaotic Meta-heuristic Algorithms for Optimal Design of Structures / / by Ali Kaveh, Hossein Yousefpoor
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2024
ISBN	3-031-48918-7
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (349 pages)
Collana	Studies in Computational Intelligence, , 1860-9503 ; ; 1129
Disciplina	003.857
Soggetti	Computational intelligence Mathematical optimization Computational Intelligence Optimization
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction -- Chaotic Maps and Meta-Heuristic Algorithms -- Chaotic Cyclical Parthenogenesis Algorithm -- Chaotic Teaching Learning-Based Optimization -- Chaotic Biogeography Based Optimization -- Chaotic Differential Evolution -- Chaotic Water Evaporation Optimization -- Chaotic Artificial Bees Colony -- Chaotic Imperialist Competitive Algorithm.
Sommario/riassunto	In this book, various chaos maps are embedded in eleven efficient and well-known metaheuristics and a significant improvement in the optimization results is achieved. The two basic steps of metaheuristic algorithms consist of exploration and exploitation. The imbalance between these stages causes serious problems for metaheuristic algorithms, which are immature convergence and stopping in local optima. Chaos maps with chaotic jumps can save algorithms from being trapped in local optima and lead to convergence toward global optima. Embedding these maps in the exploration phase, exploitation phase, or both simultaneously corresponds to three efficient and useful scenarios. By creating competition between different modes and increasing diversity in the search space and creating sudden jumps in the search phase, improvements are achieved for chaotic algorithms. Four Chaotic Algorithms, including Chaotic Cyclical Parthenogenesis

Algorithm, Chaotic Water Evaporation Optimization, Chaotic Tug-of-War Optimization, and Chaotic Thermal Exchange Optimization are developed.