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	Edizione	[1st ed. 2017.]
	Descrizione fisica	1 online resource (XIV, 282 p. 127 illus., 107 illus. in color.)
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	Soggetti	Computer mathematics Applied mathematics Engineering mathematics Computer simulation Industrial engineering Production engineering Computational Science and Engineering Mathematical and Computational Engineering Simulation and Modeling Industrial and Production Engineering
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di bibliografia	Includes bibliographical references at the end of each chapters.
	Nota di contenuto	Preface -- Introduction -- Supply Chain Problems -- Logistics Problems -- Manufacturing Problems -- Aeronautical Problems -- Big Data Applications -- Conclusions -- Bibliography -- References.
	Sommario/riassunto	Building on the author's earlier Applied Simulation and Optimization, this book presents novel methods for solving problems in industry, based on hybrid simulation-optimization approaches that combine the advantages of both paradigms. The book serves as a comprehensive guide to tackling scheduling, routing problems, resource allocations and other issues in industrial environments, the service industry, production processes, or supply chains and aviation. Logistics, manufacturing and operational problems can either be modelled using

optimization techniques or approaches based on simulation methodologies. Optimization techniques have the advantage of performing efficiently when the problems are properly defined, but they are often developed through rigid representations that do not include or accurately represent the stochasticity inherent in real systems. Furthermore, important information is lost during the abstraction process to fit each problem into the optimization technique. On the other hand, simulation approaches possess high description levels, but the optimization is generally performed through sampling of all the possible configurations of the system. The methods explored in this book are of use to researchers and practising engineers in fields ranging from supply chains to the aviation industry. .