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	Descrizione fisica	1 online resource (XX, 530 p. 151 illus., 14 illus. in color.)
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	Soggetti	Physics Applied mathematics Engineering mathematics Computer science - Mathematics Computer science—Mathematics Numerical and Computational Physics, Simulation Mathematical and Computational Engineering Computational Science and Engineering Mathematics of Computing
	Lingua di pubblicazione	Inglese
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	Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
	Nota di contenuto	General Considerations -- Coordinate Transformations -- Grid Quality Measures -- Stretching Method -- Algebraic Grid Generation -- Grid Generation Through Differential Systems -- Variational Methods -- Curve and Surface Grid Methods -- Comprehensive Method -- Numerical Implementations of Comprehensive Grid Generators -- Control of Grid Properties -- Unstructured Methods -- Applications of Adaptive Grids to Solution of Problems -- References -- Index.
	Sommario/riassunto	This new edition provides a description of current developments relating to grid methods, grid codes, and their applications to actual problems. Grid generation methods are indispensable for the numerical solution of differential equations. Adaptive grid-mapping techniques, in particular, are the main focus and represent a promising tool to deal with systems with singularities. This 3rd edition includes three new chapters on numerical implementations (10), control of grid properties

(11), and applications to mechanical, fluid, and plasma related problems (13). Also the other chapters have been updated including new topics, such as curvatures of discrete surfaces (3). Concise descriptions of hybrid mesh generation, drag and sweeping methods, parallel algorithms for mesh generation have been included too. This new edition addresses a broad range of readers: students, researchers, and practitioners in applied mathematics, mechanics, engineering, physics and other areas of applications.