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	Titolo	Discontinuous Galerkin method : analysis and applications to compressible flow / / by Vít Dolejší, Miloslav Feistauer
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	Descrizione fisica	1 online resource (575 p.)
	Collana	Springer Series in Computational Mathematics, , 0179-3632 ; ; 48
	Disciplina	515.35
	Soggetti	Numerical analysis
		Computer science - Mathematics
		Mathematical models
		Applied mathematics
		Engineering mathematics
		Numerical Analysis
		Computational Science and Engineering
		Mathematical Modeling and Industrial Mathematics
		Applications of Mathematics
	Lingua di pubblicazione	Inglese
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	Livello bibliografico	Monografia
	Note generali	Description based upon print version of record.
	Nota di bibliografia	Includes bibliographical references and index.
	Nota di contenuto	Introduction -- Part I: Analysis of the discontinuous Galerkin method -- DGM for elliptic problems -- Methods based on a mixed formulation -- DGM for convection-diffusion problems -- Space-time discretization by multi-step methods -- Space-time discontinuous Galerkin method -- Generalization of the DGM -- Part II: Applications of the discontinuous Galerkin method -- Inviscid compressible flow -- Viscous compressible flow -- Fluid-structure interaction -- References -- Index. .
	Sommario/riassunto	The subject of the book is the mathematical theory of the discontinuous Galerkin method (DGM), which is a relatively new technique for the numerical solution of partial differential equations. The book is concerned with the DGM developed for elliptic and parabolic equations and its applications to the numerical simulation of compressible flow. It deals with the theoretical as well as practical

aspects of the DGM and treats the basic concepts and ideas of the DGM, as well as the latest significant findings and achievements in this area. The main benefit for readers and the book's uniqueness lie in the fact that it is sufficiently detailed, extensive and mathematically precise, while at the same time providing a comprehensible guide through a wide spectrum of discontinuous Galerkin techniques and a survey of the latest efficient, accurate and robust discontinuous Galerkin schemes for the solution of compressible flow.